1:Beaglehole and Beaglehole E-5 (1934-5)1938 Pukapukans

TOYS AND SPORTS EQUIPMENT

524 Pukapukan children are clever at making original toys from coconut leaflets. Coconut leaflet toys, made by children according to the technique
824 described for Aitutaki (26, pp. 318-322), include the leaflet Jew's harp (*vivo*), the windmill (*potoka lounin*), the leaflet bull roarer (*wakatangitongi*),
171 and the leaflet spinner (*wakaki matangi* or *wuti iele lounin*). Whereas the Aitutakian spinner is made with a collar and suspended with a banana leaf fiber (26, p. 321), the Pukapukan spinner is closed by skewering the two leaflet ends together with a piece of coconut leaflet and is suspended by a strand of human hair knotted to a thin length of coconut midrib.

A trick figure made from a strip of dried coconut leaflet is termed *te tionga a Maui* (fig.49,*b*), because the gods gave this figure to Maui to see if he could disengage the two leaflet sections when they were testing out the culture hero. Children and adults spend much time trying to solve the puzzle, without success however, for the solution, if ever there was one, is now lost.

A coconut-leaflet trumpet (*pu lounin*) is made by Pukapukan children. Leaflet midribs are stripped from eight or more coconut leaflets:

> The leaflets are rolled spirally into the shape of a cone, successive leaflets being added by overlapping the ends. When a trumpet of suitable size has been made, the free end of the last leaflet is skewered to turns underneath with a small fishbone or splinter of wood. A reed made by doubling a piece of leaflet along the mesial transverse line is inserted into the mouthpiece of the trumpet.

A favorite toy made during our stay was leaflet spectacles which children perched on their noses, pretending they improved their sight.

524 Two types of ball are in use: one is a round ball made of *mahanava* wood used in cricket; the other is a somewhat square object made by cover-
177 ing a stone with plaited check coconut leaf. Both balls are termed *bolo*, a name presumably derived from the English word "ball". Either the old name for the ball has been forgotten, or the ball is an introduced toy.

Coconut-cup shoes (*tui agaipu*) are made by threading a length of pandanus or sennit through the eye of a half coconut shell. The foot is placed on the shell and the cord passes to the hand between the big and second toes.
521 Children wear these shoes today for sport, but informants said that formerly adults occasionally held coconut-cup foot races during the time of merry-
527 making that introduced the six months of pleasure.

Wooden stilts (*lolo*), said to be introduced, are sometimes used by chil-
177 dren.

The toy bow (*uma*) and arrow (*ti*) made from coconut-leaflet midribs
524 is an introduced toy. Marbles were also unknown formerly, but today children use as marbles (*pri*) seeds from the *matau* tree.

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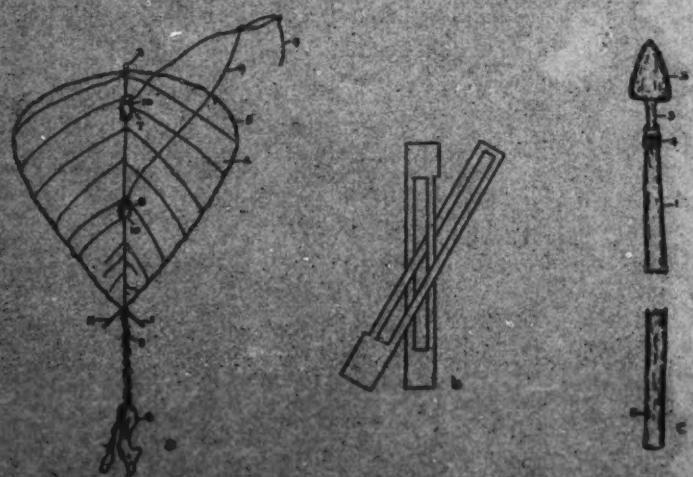
524/177 Swings (*takelake*) are made by suspending a crossbar of *ngangle* wood by a sennit rope from a branch of convenient height. The swing is supposed to have been introduced originally by the voyager Wue on his return to Pukapuka. No skipping rope was known.

Noise makers (*pulaka mana*) are made by cutting shallow longitudinal slits on a length of *pulaka* stalk. The flanges so made are raised. With the stalk held in the left hand, the flanges are knocked down in succession with a sweeping blow of the dorsal side of the right hand. A loud noise results as each flange is leveled.

Pop guns (*mana*) are made by inserting a piston into the hollow core of a dry *ngayu* branch. The seed of the *tasyinu* tree or a piece of mature coconut flesh (*ipiipi*) is inserted into the branch and the piston sharply pushed down on top of the seed to produce a loud report. Another pop gun is made with the hollow wing bone of the *takupu* bird, a piston of *puapua* wood, and *tasyinu* seed or *ipiipi* to produce the report.

526 A surf board (*papa*) is any flat piece of wood of about an arm's length on which arms and chest are rested when surfing. No elaborate long boards are used, nor does the surfer ride in any position but the prone one.



524/284 FIGURE 49—Toys and composite tools. a, kite (*helile*) of *puapua* leaf (Cloys): accessories leaden midrib (1, 2) bent into required shape and fastened to another midrib (3) by strips of coconut fiber (*helaiu*); edges of large *puapua* leaf (4) bent over this frame and fastened to it by continuous thread of fiber (5) which passes through leaf and around frame midrib; outer midrib (3) extends below apex of kite and to this a tail (6) of two dried coconut leaves fastened by transverse twine of fiber; at two points

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524/284 (7, 8), face of kite is punctured in longitudinal mesial line and a trailer cord (9) is knotted to midrib over small wads of leaves (10) which prevent chafing of kite face. Size of kite: greatest width, 10 inches; height, 10 inches; length of tail, 3 feet. A second kite (C8058) is 9 inches wide, 10½ inches high. *b*, trick figure of coconut leaflet (*tiowpa a Moni*): dried coconut leaflet 8 inches long, 1 inch wide slit three times longitudinally; section at each end of leaflet slit transversely so that leaflet consists of two sections, front and back, each bearing two thin strips; trick is to disengage two leaflet sections without breaking them. *c*, composite dart (*velo*) of *ngayu* wood (C8100): 1, haft 6 feet 2 inches long, average diameter ½ inch; 2, head (*ulutoa*) of *ngangie* wood 1½ inches long, ¾ inch in diameter at base; 3, stem 1½ inches long, ¼ inch in diameter, pointed and driven into pithy core of haft and lashed with 10 transverse turns (4) of fine two-ply twisted *uao* cord; commencement and finishing ends buried; lashing holds *ulutoa* head fast and prevents haft head from splitting. Most darts also lashed with transverse turns at proximal (5) end (*yiku*) of haft to prevent splitting of haft when thrown dart strikes ground. Above described dart is small; a more typical dart, examined in the field, was 7 feet 6 inches long, ½ inch in cross section, with an *ulutoa* head 4½ inches long; butt end of dart was bound with *uao* cord.

524 Kites (*kolilo*) are made of a *puapua* leaf stretched over a coconut leaflet midrib frame (fig. 49, *a*). The tail (*kove*) is made of two dry coconut leaflets, the flying cord of strips of coconut midrib (*kalava*). A circular faced kite is termed *kolilo ipu*: a semi-diamond shaped kite is termed *kolilo kaleuleua*.

The only tops in use are teetotum tops (*potekateka*). These are *taupulepule* shells (*Conus ebraeus?*) which are spun (*tahavilivili*) with a twirl of the fingers. The spinning point is termed *nukinuli*, the spun end, *ulu*. No game is played with these tops; they are used as toys only.

526 Throwing discs (*potekateka wasu*) are made by rubbing down a piece of *punga* coral with another stone until the coral is roughly disc-shaped. Apparently no particular care is taken to produce a well-finished article. A rough disc seen in the field was 3¼ inches in diameter and between ¾ and 1 inch thick. To throw the disc is *wakapotekateka* or *wakatateka*.

Discs for the game of *tupe* are made of coconut shell. In a set of 12 (C8194), five discs are cut from the eye end of the shell, seven from the opposite end of the shell. The discs range in weight from 1 to 1½ ounces and in diameter from 3 to 3⅜ inches. No particular pains have been taken over the discs. The surface of the shell is smooth, but not polished.

The dart (*tiko*) is made of *ngayu* wood:

526/322 Lengths of wood are cut from the bush and heated over a fire so that the green bark may be easily peeled from the wood. The dart is rubbed smooth between two pieces of coconut shell. The shorter dart (*putiko*, C8061) is about 2 feet long and ½ inch in diameter. The longer dart (*tiko*, C8062) is about 8 inches longer and of the same diameter. The darts are bluntly pointed at the proximal end; the distal end (the head) of one of the darts has been worn away from striking the ground. It is a matter of choice whether the player uses the short or the long dart.

The composite dart (*velo*, C8100) is made of *ngayu* wood with a head (*ulu toa*) of *ngangie* wood (fig. 49, *c*):

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GAMES AND AMUSEMENTS

524 The two seers, Wotos and Te Yos, brought back to Pukapuka some
171 games they learned in the Underworld (p. 327). Pukapukan navigators to the
eastern and western islands, notably the chief Wue, introduced the remainder
526 of the games played in Pukapuka. A series of 48 string figures (3) collected
in the field is not included in the following descriptions of amusements.

857 Organized plays, dancing, and singing, have a large part in the life of
children (2), especially in the evening when they play together on the
572 beaches, watched by the adults who move to the beach to cool off in the
evening breezes.

Dramatizations of selected native traditions and dramatic performances
536 of Biblical legends are popular. These are now held on May Day; formerly
they were probably associated with the festivities marking the morning
527 rising of the Pleiades. Each village chooses one or more legends for performance. These are rehearsed for some weeks and then presented in turn before the island assembled. The performances follow in general those described by Buck (29, pp. 198-203).

CHILDREN'S GAMES

526 *Kio*, played in the lagoon, on land, or in the trees. Two equal teams (*tuka*) of children line up and face each other in the lagoon. One team occupies deep water, standing on a coral rock (*teke*). The other team is in shallower water. The deep water team dives from the rock, and, by swimming under water, tries to pass the line of defense of the inland team without being caught. Each member of the deep water team that gets past the inland team scores a point (*kai*) for its side, ten points giving a win (*to te uiu*). The teams take turns at defense and challenging positions until one team wins. In land *kio*, the teams stand about 15 yards apart, one team trying to run round or through the other's defenses. In tree *kio*, which is uncommon, one team defends a position in front of a tree, through which the other team must go to climb into the tree.

Wai (playing) *kio*. One player, usually self-nominated, is *kio* (it). He stands still while each of the other players comes up, hits him on the head with the hand, and runs away. When all have hit him, *kio* takes up the chase, which continues until he has caught and whipped each of the players.

Wakatou nana (hide and seek). A favorite in the evening when it is not easy to see. Two teams are formed and one goes off to hide. The other team gives it a few minutes' grace, and then announces, "Ka uiu!" (We shall search!) If after a thorough search they fail to find hidden players, they call out, "Wakayuya" (literally, get wet). Then those of the hiding team who have not been discovered walk in, scoring one point (*kai*) each. The two teams take turns at hiding and searching, the first team to score ten successfully hidden members wins the contest. With this victory goes the privilege of whipping the members of the losing team. These whippings are never severe; a gentle clip on the head or back with hand or stick suffices.

Wai otou nanna (old nanna, playing spirit of the sea) or *wai Levi* (modern nanna, playing the god Levi). Played on bright moonlight nights by small children, older girls, and grown women, of ages ranging from 5 to 40 years. Two circles (*tuvana*) are drawn about 30 feet apart. One player, usually the oldest, takes the role of Lowake (the old nanna, a god), or of Levi (the modern nanna). He stands in one circle, all the

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526 other players in the other circle. Leweke calls out, "Kaina, kaina na wale takataka o Leweke (Levi)" (Somebody has broken into the storehouses of Leweke or Levi). Then he rushes for the other players, who must run from their circle to his circle without being caught or tapped with the stick he is permitted to carry. He is allowed to whip with his stick any player he catches, because he has caught the "thief" who has been stealing his *takataka* nuts. Those caught must leave the game. Now standing in the second circle, Leweke repeats his call, and rushes for the remaining players, who try to run in safety to the opposite circle. This goes on until he has caught all the players. If a second game is to be played, another player is chosen to be Leweke. After this game, a group often goes on to play introduced games, common western games like "The fox and the hens", or "The cat and the chickens". The cat stands in front of and facing a line of players, hens and chicks. The cat asks, "Who is at the end of the line?" The hens answer, "Nobody." The cat says, "Shall I go see?" The hens say, "Certainly." Before the cat tries to pass the line of hens in order to attack the chickens at the end of the line, all dance together, and then the cat fights the hens who try to protect their chickens.

524 *Tolotolounga*, played by children from 8 to 10 years. Two equal teams are chosen. One team sits comfortably on the ground. The other team retires behind a house where it selects two of its members, one to act as a crier (*valovalo*), and the other to crawl (*totolo*) behind the *tohajoa* mat which the crier carries upright covering the crawler's feet and body. The pair thus approach the seated team. The crier calls out, "Tolotolounga, tolotolounga na ngalo, koai?" (Crawling, crawling, he has disappeared, who is it?). Now the members of the waiting team are collectively given one guess as to the name of the hidden crawler. If they guess correctly, the crawler's team is *mate* (dead). If they guess incorrectly, the crawler's team scores a win and then comes out again. Not until the crawler's team dies, does the sitting team get its turn.

Poi, another guessing game. Two or more teams sit outside. A player (A) from one team stands up and looks in front of him. A player (B) from the other team comes up behind him, and facing the same way as A, places his hands over A's eyes, and then lightly and quickly touches the back of one of A's legs. A has to guess which of his legs has been touched. If he guesses correctly then the two teams change places. If not, then the first team continues to guess.

Dances and Songs

857 The locus for the children's dancing and singing is usually the beach.
535 Children dance any time during the day or evening, just as the spirit moves
them, in groups consisting of boys alone, or mixed groups. Much of this
177 imitates adult activities; whenever adults are practicing dances, groups of children gather on the beach to perform to the best of their ability the same dances.

The dancing is of the modern Tahitian style, with all the dancers in line performing the same rapid movements of arms, legs, and hips to the rhythm
859 of modern Tahitian, Samoan, or Lower Cook Islands songs. The indi-
533 vidualized Samoan type of dancing is absent. Some songs (*anu*, modern) seem to be improvised as the occasion demands, and the children are expert at fitting melody and words together. The words of many children's songs were recorded; most of them, however, are not translatable because they consist mainly of nonsense jingles which fit in with a particular melody. A few translations which it has been possible to make are given to suggest the

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Ko te kau, ko te kau o Maui	The fishhook of Maui (in Scorpio)
Ko te yiku, ko te yiku o te kiole	The tail of the rat (Coma Berenices)
Ko te yiku, ko te yiku o te kiole	[repeat]
	9
E manga tangitangi, e manga tangitangi	Singing branches, singing branches
E manga tangitangi, e manga tangitangi	[repeat]
Mei te pulaka tunu, mei te pulaka tunu	Like *pulaka* cooking, like *pulaka* cooking
Mei te pulaka tunu, mei te pulaka tunu	[repeat]
	10
E Luea to tinu e angi nei	Oh Luea, your wind blows here
E Luea to tinu e angi nei	[repeat]
Ka pa ana to vaka ki Kalaumea	Your canoe will be carried to Kalaumea
E, ka pa ana to vaka ki Mata Kalokalo	Your canoe will be carried to Mata Kalokalo
E, ka tau la koe ki tawa ma te *lulu* ma te wawa	You will land at the side with the people with their talo
Ka tae la koe ki Kalaumea, ka tae la koe ki Kalaumea.	You will reach Kalaumea, you will reach Kalaumea.

MISCELLANEOUS GAMES

857 524 177

Other games are played by children, by adults, and by mixed age groups. The following are simple games of this class requiring little organization or skill:

Paloni (a type of counting-out game). The players group themselves together and sing a song, which rhythmically counts out the members of the group. The person on whom the last count falls must stand up and dance for the company. It is probable that this game was introduced by missionaries from other islands for it is now associated with singing and dancing of Tahitian origin.

Kibi uuli tau. A group of adults and older children gather together, and sing a chant. Each endeavors to remain serious while causing another to burst into laughter. The person who laughs is then made fun of by the company.

524 *Kinikini* is played by two or three persons seated near each other. The first stretches his right leg forward, the second lays his foot over the other's foot, and so on, each participant placing first one foot, then the other on top of the other's feet. On the top of the heap of feet, the players alternately place their hands, pinching (*kinikini*) the foot or hand immediately below with the thumb and index finger. In this position, they repeat a short chant. Each time the chant is finished, the player whose hand is on top removes it from the pile and licks his thumb as the others sing "yopu" (lick). When all the hands are retrieved from the pile, the chant is continued as each player removes his foot, licking his big toe.

Wahatongi ngutu is a favorite game of children and of some adults, especially women. The player contorts his face so that the skin is drawn tight over the cheek and mouth; he snaps the index and middle fingers of each hand alternately in rhythm against the cheek and chin to produce a loud sound. Children frequently play this game when intent on watching some activity or when slightly embarrassed.

526 Hopping and jumping games are played by young men, women, and children, usually in the village street. These are very popular in the cool of the evening. Endurance is the object. Various types of hopping or jumping are distinguished: *uto pepe*, in which the soles of both feet are brought up behind to touch the buttocks; *uto tuilimi*, in which the sole of one foot only is made to touch the buttocks; *utuutu*, which consists in ordinary jumping up and down with both heels kept together; and *lokitoki* in which the player hops on one foot.

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526 *Utu pepe wenua.* A line (*wenua*) two fathoms long is marked off on the ground by scraping with the foot. Two teams (*vaka*, canoes) are chosen. In turn each player of one team makes the *utu pepe* movements up and down the *wenua* line, while the count is kept of the total number of times the team moves up and down the line. The players of the other team follow. The team that scores the greatest number of complete jumps wins the contest. In *utu pepe wakaag*, two players, one from each team, jump together at the same time, without moving on any course. One team wins a point (*kai*) when the player from the other team drops out. The team that first wins 10 jumps (*ulu laungaula*), wins (*ia te ulu*) the match.

In *utuutu* and *utu taviliöli*, a *wenua* line may or may not be used.

Tehitehi hopping. A rectangular area (*wenua*) about 15 feet long and 10 feet wide is lined off on an open space. The participants, singly or in groups, hop up and down this line, scoring one point for each arrival at either end of the boundary. The player with the most points wins the contest. Because this is an endurance test, the skillful hopper makes each pace as long as he can and thus economizes on wind.

524 *Tiitili koua* (juggling with very young immature coconuts). Played by children and adults. In competitive juggling, the players chant and juggle in rhythm; those who are able to continue to the end of the chant win the contest. A number of chants especially composed for this amusement were collected (1). The usual number of *koua* used in juggling is three; some experts are able to juggle four at a time.

Shell Tossing

Tiki pulepule (tossing *pulepule* shells, the Polynesian counterpart of jackstones). Played by adults and children of both sexes. From two to twenty persons may play at one time. A large number of seashells of the type known as *pulepule* (*Cypraea*) are gathered and placed in the center of the group of players who take up their positions in a circle seated on *tohapau* mats. Each player has a throwing stone (*tiki wutu*) which he holds in his right hand. The object of the game is to toss up the stone, pick up the shells from the ground in a given fashion, and catch the stone as it comes down. Twenty-nine figures may be played in one game, starting with the simple tossing up of the stone and removing of one shell from the heap. The beginner, who is chosen in no special way, but who simply is the first to call out, "I am first (*Ko oku te pule tayi*) is known as the "*pule tayi*". He continues to play until he misses—until the stone has fallen (*na te*) without his having caught it, until he fails to pick up the required number of shells, or until he has removed all the shells, which is one win (*ulu tayi*) for him. Should he miss, the play goes to the next person on his left, and so on in a counter-clockwise direction round the circle of players, continuing the one figure until all the shells have been removed. As each player picks up shells during his play, he places these under his bent knee, to be counted when the figure is over. Each player in turn counts (*kaui*) his shells one by one, counting without any special numerical prefix (*katoa* being 10, *lau lua*, 20, and so forth). At the end of the play the number of figures won by the individual players, which are called *ulu tayi*, *ulu lua*, and so forth, are compared and the one who has won the most individual plays wins (*ia te ulu*). To tie either in a single figure or for the whole game is *uwoto*. The loser is *uwoea* (defeated). As each figure is finished, the next is begun by the person to the left of the starter of the preceding figure, regardless of where the last play ended. Thus, each player from the start is called by the name of the figure which he will begin. The figures are played in the following order:

1. *Pule tayi*: throw up the stone, remove one shell from the heap, and catch the stone as it drops.

2. *Pule lua*: remove two shells at a time with each toss of the stone. It is considered a miss to pick up more or less than the required number. An odd shell at the end is counted by the player who finishes the figure.

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3. *Pule tolu:* remove three shells with each toss of the stone.

4. *Pule wa:* remove four shells with each toss of the stone.

5. *Iko* (bend): the player whose turn it is to start the figure has merely to bend his elbow to score a win. There is no trick in this; it is merely the advantage of being the fifth starter.

6. *Lukuluku* (scoop): throw up the stone, scoop up as many of the shells in the pile as possible with two hands, and catch the stone on top of the shells in the two hands. The player then pairs all the shells he has picked up to see if there is an odd shell (*kai*) over. If such is the case, he may continue to play the figure, but if not, he is said to *lite* and must return the shells to the pile; the turn passes to the next player, who tries his luck. If he succeeds, the odd shell is returned to the remaining pile of shells to be picked up in the next scoop. To be unable to throw out the odd shell (*maka te kai*) constitutes the "*lite*".

7. *Pule ka:* throw up the stone and pick up with one hand only, as many shells as possible, catching the stone on the top of the shells as it falls.

8. *Pule ikoiko* (bend): as in 7, pick up as many shells as possible with one hand, catch the stone on them, and quickly flex the wrist inward to the body as the stone is caught.

9. *Pule pu* (hole): throw up the stone, pick up as many shells as possible with a side sweep of the hand from right to left, and catch the stone on the radial side of the lightly clenched fist in the hollow formed by the flexed index finger.

10. *Pule tutu* (erect): toss the stone in the air, hit the pile of shells twice with the palm of the hand, pick up as many shells as possible and catch the stone with the same hand.

11. *Pule moe* (lying): toss up the stone, pick up as many shells as possible, catch the falling stone in the hollow between the outstretched thumb and index finger.

12. *Pule tu te limo* (hand erect): toss up the stone, pick up as many shells as possible, and catch the falling stone in the hollow between the vertically outstretched thumb and index finger.

13. *Pule patu te limo* (strike the hand): repeat 12, and snap down the index finger on the stone as it is caught.

14. *Pule wokayayake:* throw up the stone, pick up the shells, rotate the forearm and hand in a counter-clockwise direction so that the elbow points upwards and away from the body, catching the stone on the ulnar surface of the clenched fist, in the hollow made by the flexed little finger.

15. *Pule kakalo ki te langi* (look at the sky): gaze upward and without looking at stone or shells toss up stone, pick up shells, and catch the falling stone.

16. *Pule kakalo ki te tangata* (look at the people): staring at the people around and without looking at shells or stone, toss up the stone, remove shells, and catch falling stone.

17. *Pule tulo* (shove): throw up the stone, push away the pile of shells, then pick up as many of them as possible, catching the falling stone.

18. *Pule wahamayangi* (quietly): separate the individual shells in the pile from each other, spacing them at about a half inch apart. Then one at a time, with the toss of the stone, remove each shell without touching any other shell with the hand and without allowing the stone to hit against the shell in the hand as it is caught.

19. *Pule tangi i te tua o te puletule* (sound the back of the shell): toss up the stone, remove a shell from the pile, and catch the falling stone against the shell, so that the two surfaces make a clinking noise.

20. *Pule hali i langa* (wait above): toss up the stone, pick up as many shells as possible, and catch the stone while it is still high in the air, not lower than the top of the head.

21. *Pule hali i lalo* (wait below): throw up the stone, pick up shells, and catch the stone with the hand resting on the ground.

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22. *Pule toko ki lungo* (raise up): throw up the stone, pick up as many shells as possible, and catch the falling stone with an upward swooping movement of the hand.

23. *Pule yuna:* throw up the stone in such a way that it will fall near the front of the body, remove as many shells as possible, and catch the stone at the height where the *yuna* (neck ornament) hangs on the chest.

24. *Pule luku ki te vaka* (scoop to the canoe): throw up the stone, toss a handful of shells into the lap and catch the stone.

25. *Pule lakei* (decorate): place the shells in a line along the outside of one leg and thigh at intervals of one inch, and remove these one by one with a toss of the stone, in such a way as not to disturb the remainder.

26. *Pule lupe:* toss the stone high in the air, slap thighs with both hands, pick up shells, and catch the falling stone.

27. *Pule yi patuki* (fish *patuki*): throw up the stone, move one shell at a time toward the body with a flick of the flexed index finger and catch the stone.

28. *Pule kekemo* (eyes closed): throw up the stone, close eyes tightly, pick up shells and catch the falling stone without opening the eyes.

29. *Pule uuyilayilo* (sleepy eyes): throw up the stone, and with eyes more than half-closed pick up shells, and catch the falling stone.

Disc Throwing

526

Wakapotsheteko (disc throwing for distance). The disc (*potsko*) is a stone of *pungo* coral. To throw the disc is *wakatateko*. The course is the village street. The teams are made up of ten men each, one team from each village. Three men throw each round. The stone is held with the thumb and index finger and thrown for distance with an underhand motion. The team with the greatest number of longest throws at the end of ten rounds wins the contest.

Disc Pitching

Tupe (disc pitching). The game is played with cocoanut-shell discs, of varying weights and sizes, cut from the bottom of the dried, hard *pakeli* nut shell. The discs are polished smooth and the edges made even and regular. Two sets of discs are not distinguished by different colorings, the discs are not ornamented, nor is there any special container for them. The surface on which the discs are thrown is a new, smooth, ordinary pandanus mat, 6 to 8 feet long and of any width. The players sit at the head of the mat. The opposite end of the mat is raised 4 or 5 inches by the insertion under its edge of a cocoanut leaf midrib, which is called for this purpose *kauyalo*. A third person called the *kauyalo* sits at the raised end of the mat to keep the prop in position, to judge and recover the thrown discs. The object of the game is to place the discs as near the edge of the mat as possible, even tilting them over the raised surface, so that they are closer to the edge than the discs of the opponent.

The game is played by two players at a time. Any even number of discs up to 20 is equally divided between them. Though the first pitcher is at a disadvantage, he is not chosen in any special way. One player simply says to the other, "Tupe", and the other throws. He tosses his disc up to the edge of the mat with a well-aimed side twist of the wrist which spins the disc and helps to check the danger of its rolling off the edge of the mat. If the first player's placement is a good one and lies just at the edge of the mat, but not tilting over, the second player attempts with his first pitch to hit (*tongi* or *tita*) it off from the inner side so that his own disc will remain on the mat while the other is knocked off. If the first disc of the first player is badly thrown and constitutes no danger to the second player, the second player throws without attempting to upset its position but to place his own shot in a good position on or near the edge of the mat. Then the first player, in his second pitch, will attempt to knock off the opponent's good shot, replacing it with his own disc. As soon as he betters his own preceding throw, which has itself been bettered by the opponent, the disc of his preceding throw is

1:Beaglehole and Beaglehole E-5 (1934-5) 1938 Pukapukans

526 removed (*to*). Should he have two or more discs on the mat, none of which is bettered by the opponent's discs, these are left until such time as the opponent manages to place a disc ahead of them, when all behind opponent's placement are removed.

The players in turn shoot their discs always trying to line their own discs on the edge of the mat, while keeping the opponent's off. Two skillful players will often play through their discs, each putting his shot well on the edge of the mat, only to be knocked off by the next play of the opponent. In this case there will be only one score (*kai*), the last disc thrown by the second player. To knock two of opponent's discs off the mat with one throw is *tito lua*; to knock off three is *tito tolu*. Should there be several discs on the mat at the end of play, only one player's disc or discs bettering all discs of the opponent is counted in the score. Should it happen that the player who started has no disc remaining on the mat and only one disc left to throw, while the finisher has two discs left to throw and at least one on the mat, then the latter, without taking his turn, calls out, "Na lave", and scores three points. The beginning player forfeits his last shot, and the next round begins.

With the help of the *kauyalo*, the players remember their own scores for each round; the player who first scores ten points wins (*ia te ulu*).

A game of *tupe*, though played at one time by only two players, is actually of the nature of a group game. At the end of a game, the loser briskly jumps up and another person takes his place to try his skill against the winner. The number of persons that one player successively defeats is his *iki*; two, *iki lua*; three, *iki tolu*. The crowd sits or stands about watching with the greatest interest and coaching each shot. Should the *kauyalo* neglect to remove a dead *tupe*, someone in the crowd of onlookers is sure to scold him and order him to remove the disc, "To te tama ia! E kole, te tupe i te tautawa na!" (Remove that child! No, the one on the side!) The player must decide whether to attempt to knock off the opponent's well-placed disc, with the danger of losing his own disc over the edge of the mat, or whether to leave the opponent's disc in position and attempt to place his own disc ahead of the other. Similarly the skillful player has a feeling for the relative merits of each of the discs; a heavy disc he will save for a crucial shot when it is important to knock the opponent off the mat, a light disc he uses for a placement shot at the beginning. The game is played for hours on end by successive players, the player who scores most victories at a session being adjudged the winner. A favorite time to play is in the cool of a moonlight night, when a full moon gives ample light to judge the discs.

524 There are no records of indoor or outdoor guessing games other than the children's games of *tolotolounga* and *poi* nor do the Pukapukans seem to have indulged in riddling contests.

INTER-VILLAGE CONTESTS

526 [177] Outdoor sports competitions between the villages were very common. Of the large variety of such games, many have been submerged at the present time by a passion for cricket, which is played between village teams of men and women with any number of players on each side for two or three weeks at a time. Old-time games have not been forgotten, however, and our presence on the island was the incentive for their revival.

Coconut-tree climbing contests (*uringanga hake niu*). Two coconut trees are selected near an open space. The height of the nuts on one tree is measured with a rope; the same height is measured off on the other tree and marked on the hole by a fastening of coconut leaf. In contests where the two trees are of about the same height the winner is the one whose nut hits the ground first. Where the trees are of unequal

539 A Child's juggling chant (1)

Ta matou kionga nei i Yeu-manao	In our playing water games off the beach at Yeu-mamao
I te ipo na Lameka nei	The sweetheart of Lameka comes there,
I te tupu lelei, tenga patua	What a pretty body she has, struck were her thighs
Ya konikoni e Enoka	By the embrace of Enoka,
Kakole la ia Aumuna, Koyimatamai, Walapekamai.	Aumuna got nothing from the women Koyimatamai or Walapekamai. (2)
Taku poteka potekateka,	I spin my shell top round and round,
Taku kelinga pipi o tai	I scoop up shellfish on the beach,
Taku kao mata awiawi	I pick a flower bud to open in the evening.
Wakaake ko lunga o Matala	I climb to the top of the hill of Matala,
Ko te ulu tiale i Te Malama.	To the grove of tiale flowers at Te Malama.
Kiteai loa taku kauwi ngapeipei o te wala ia no Wainuku	I find ripe fruit on the pandanus tree of Wainuku--
Taku kaka wua lengalenga na tau i te niu na Kolia.	My ghost tern is nesting on its yellow eggs in the coconut tree of Kolia.

[524] [857] 1. This chant is sung by children as they skillfully and rhythmically juggle small immature coconuts. Note that the chant describes the daytime activities of a child as he wanders about the islet.

2. As the children play on the outer beaches little escapes their attention. On their return to the village they take mischievous delight in composing and singing little songs describing what they have seen, often to the extreme embarrassment of would-be secretive adults.

Introduction

121 The following string figures were collected at odd moments
126 during the course of formal ethnological study of Pukapukan culture in 1934-1935. Information about this Polynesian atoll, its culture and the nature of the joint research of Ernest Beaglehole and myself is given elsewhere (1). I am indebted

1. See 2, Literature Cited, page 27.

to Kenneth P. Emory, Bernice P. Bishop Museum, for assistance in making the photographs from which the line drawings have been made. Ernest Beaglehole has helped me prepare this manuscript for publication.

Figures

●524 String figures (waiwai) are made by Pukapukans with lengths
517 of pandanus material (lito). Both children and adults enjoy making the figures whenever the spirit moves them. "Crazes" are common. For days at a time everyone has a piece of pandanus in his hand and makes the figures whenever he has a moment to spare. Experts good naturedly teach novices, and children too young to apprehend nevertheless proudly contrive with weirdly tangled strings to emulate their elders. Then the craze dies down and no one bothers with the figures until a later chance spark recreates popular interest. The figures are made for amusement only. They have no religious or magical import.

Though most can make the majority of figures collected, only a few know them all. All the people however are familiar with the names of every old figure and are quick to label as a mere thing (mea wua) of no account, modern inventions.

The following collection includes, with one doubtful exception, only authentically old Pukapukan figures.

Comparative note

524 The accompanying table shows the distibution of 17 string
171 figures and 1 trick figure of the Pukapukan series which correspond to figures reported from other Oceanic areas. (2)

2. An asterisk over the name of a figure in the table indicates that the figure is not identical in all movements with the corresponding Pukapukan figure. In most cases one figure continues where the other leaves off. In all cases the figures are sufficiently alike over a series of movements for the correspondence to be noteworthy.

●524 171 The comparative material is much too unequal for final results to be adduced and must inevitably remain so until an exhaustive number of figures is collected from each island group in Occeania. Certain tentative conclusions however may be mentioned. Taking Polynesia proper and dividing it into four sub-areas (north, Hawaii; south, New Zealand; central and east, Aitutaki, Australs, Marquesas, Society, and Tuamotus; and west, Tokelau, Tonga, Samoa, Uvea, and also Fiji), the percentage of correspondence between Pukapukan figures and the total number of available figures for each area mentioned is shown in the following:

	Figures reported	Pukapuka	Percentage
West	54	17	31
South	36	7	20
Central-East	218	31	14
North	115	4	3

From this it is evident that prevailing correspondences between Pukapuka and the rest of Polynesia rather heavily favor the West. The percentage of 31 for the West may be compared with a total correspondence of 37 percent for Polynesia, excluding the West. If western and southern affiliations with Pukapuka are grouped, the percentage correspondence is 51 against a correspondence of 17 percent with North, Central, and East.

Of the 8 Pukapukan figures which correspond with figures from Fiji, 6 are widely distributed throughout the rest of Polynesia. Only 2 are reported for Pukapuka and Fiji alone. Of the 9 Pukapukan figures also found in the Tuamotus, 7 are found elsewhere in Polynesia, leaving but 2 which are reported for the Tuamotus and Pukapuka alone. Only 1 of the 7 Pukapukan figures found also in New Zealand is not reported elsewhere. This analysis indicates that unique Pukapukan figures occur equally in part of the West, part of the East, and to a degree, in the South.

The Pukapukan series of 6 figures which are grouped under the type figure, Te-imu-o-Wale-Puapua, is strikingly absent in figures reported elsewhere. The Marquesan figure, Te-nohona-o-te-kua (Handy, 9, p. 32), shows vague resemblances to one of the series (Lua-tangata). The Maori figure, Kopu 2 (Andersen, 1, p. 65) bears some resemblance again to another of this series, Te-imu-o-Tima, but the Maori and Pukapukan figures are by no means identical.

4: Bengiamin-3 E-5 (1934-1935) Pukapukans

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DISTRIBUTION OF PUKAPUKAN STRING FIGURES

Pukapuka	Tuamotus	Austral	Fiji	New Zealand
1. Tava	Kokihokiko (3 Diamonds)	Hauri (Rurutu)	Suviauto Kapa	Parori Over and over
2. Na wiwi (Lau kapa series)	Mangaongao	Kaupaka iatai (Kapa) Rurutu Tubuai Tup. R im.	Imbi	Takapau
3. Tikonikoni	Moko (Moth. 2)	Ga ure (Kapa)	Tambua*	Mauli*
4. Wala yila wus		Malariki (Kapa)	Lalakai	Ikiki
5. Kumala		Ga hamia (Kapa) Mato (Rim.) Amao iloa (Rurutu)	Velovalo	
6. Te koloma yangiyongi	Ki faru	(ia-ia) (Kapa)		Toemi
7. Wala ola		Tusra (Kapa)	Matuki lalai	
8. Te tai kiki		(Kapa) (Rurutu) (Rim., Tub.)		
9. Te itu wala kula	Kahengahenga* Na fare turu	Te Aro Matui (Rurutu) (Rim.) (Tup.)		
10. Te kivi a ia kakai	Puhanga toto			
11. Te itu wuwuli kitunga	Te vaka Tiranga			Te waka a Tama Rererori
12. La palapala				
13. Kupenga			Kupenga* Lawa	
14. Palakiola itu (a) Kittiti polo* (b) Tana kula	(a) Komo rikiriki (b) Na taringa inoho			
15. Te matangi pualoka (Moth. 1)	Te voki o Hiro*			
16. Te lusu o Te Lasiala				Kuara
17. Te pa o Matamaraka			Rara ni Kuki	
Kaua slip trick				
Authority	Emory (7)	Stokes (13)	Marsden (16)	Anderson (1)

DISTRIBUTION OF PUKAPUKAN STRING FIGURES

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Society	Marquesas	Hawaii	Tonga	Uvea
Iole	Tohizu		Matamata kupenga Moenga	Mata kupenga Iliki
Firi ren aanai	Kou hape		Lou kape*	
Mo'e		Moo-iki R (Moth. 1)	Pilitaleiku*	
	Tapa'au tua fitu*			
Apoo uai ahana Apoo tio		Wa'a		
	Popo Hkaua	Ohola amo (Moth. 3)		
Rorotu	Tuhii kea*			
				Tai loloto
Te tuma o te papa* Te fere no Oro*				
		Four Eyes A (Moth. 2)		
Fifi ren apo				Mata kupenga laiahi
		R loli o		
Handy (1)	Handy (1)	Dickey (4)	Hornell (16)	Burrows (1)

Ai Tonglohola-3b E-5 (1934-1935) Pukapukans

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DISTRIBUTION OF PUKAPUKAN STRING FIGURES

New Caledonia Loyalty Island	D'Entrecasteaux	Samoa	Aitutaki	Caroline Is.
Nameless X	Giwaja			
		Pili+ - me'ime'i	Moko	
The sugar cane				Tun-men: Betel leaf
	Fo'eo			
Sardines				
		Louiau		
Compton (10)	Jeanneau (11)	Beck (15)	Beck (14)	Compton (9)

DISTRIBUTION OF PUKAPUKAN STRING FIGURES

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Gilbert	New Hebrides	Tokelau	Nauru	
Tapu		Tafa		
	Kilikia leaves			
				Flying fishes
Shewell (10)	Dickey (4)	Shewell (4)	Hambruch (2)	

524 171 A very individual Hawaiian ending for some figures which is made by navahoing the thumbs, inserting the indices into the thumb triangles, and turning the fingers away under the figure and up which Dickey (6, p. 9) found elsewhere only in one figure reported from Africa, Ireland, and for one Osage Indian is employed in the Pukapukan figures, Te-kivi-a-te-kakai and Te-kivi-a-Yilewu in a manner which corresponds exactly to the Hawiian method. Emory (7) reports Te-kivi-a-te-kakai for the Tuamotus. The same ending is used in a related manner for the Pukapukan liu wuwuli figures.

Grouping of figures

Twenty-eight of the Pukapukan figures may be grouped into 9 series, each employing a characteristic opening or closing which is unique to the series. These groups are:

1. Te-imu-o-Wale-Puapua
   Te-imu-o-Tima
   Lua-tangata-wetu-i-te-akau
   Te-ikapaetai
   Te-langi-loa
   Te-papanga-o-te-waulna
2. Taku-laukape
   Na-wiwi
   Te-Va-o-Mannyiki-ma-Lakawanga
   Te-pitopito-i-Kolo
   Te-kapu-ta-ika
   Kau-a-pulaka
3. Te-ponaunau
   Te-katatuna
   Te-pu-o-Mumumaveka
4. Te-matangi-tavili
   Te-matangi-yauleka
   Te-matangi-tavili
5. Wala-ola
   Wala-yila-wua
6. Te-liu-wuwuli-ki-lalo
   Te-liu-wuwuli-ki-lunga
7. Paiokiole
   Tikonikoni
8. Te-tau-lunga
   Te-tau-lalo
9. Te-kivi-a-te-kakai
   Te-kivi-a-Yilewu

The remainder of the figures do not fall into any groups.

Most of the Pukapukan figures open in the usual Polynesian manner, position 1, opening A. Besides this orthodox opening, II other openings are used in 13 figures. The figures that have unorthodox openings are:

1. Te-tavatav-o-te-wui-kiole
2. Te-Pu-o-Loto
3. Te-matangi-tavili
   Te-matangi-yauleka
4. Te-matangi-taulele
   Te-tai-kiki
5. Te-itu-wala-kula
6. Te-liu-wuwuli-ki-lalo
7. Te-liu-wuwuli-ki-lunga
8. Te-kolemu-yengiyengi
9. Te-wua-ya-valu
10. Kupenga
11. Te-kau-a-pulaka

Terminology

524 In these descriptions I follow the terminology suggested by Rivers and Haddon (12), using it however in a somewhat abbreviated form in order to obtain compact presentation. The description should be readily understandable by the expert. In these descriptions the phrase, "proximally (or distally) draw back" a given string, is a shortened form of the more usual but cumbersome statement, "fingers pass proximally (or distally) into the (named) loop and carry back the given string on their backs." Proximally (or distally) in the following descriptions means therefore to enter the named loop from the proximal (or distal) side and proceed as further directed. The direction, "drop thumbs," or etc., means obviously to drop the loops from the thumbs or other named fingers by withdrawing the fingers from the loops. The direction "slip the index finger loops over the wrist" is to push other fingers into the index loops and stretch it so that it slips back, or to pick the index loop up with the opposite hand and drop it over the wrist. Preference decides which alternate the individual operator adopts. Again navahoing is done by the mouth, lips or teeth, by the fingers of the opposite hand, or by the fingers of the same hand, depending on the skill of the operator. Unless otherwise stated, it is to be understood that a figure is stretched after each movement. In opening some of the figures a secondary, unnamed figure results. This secondary figure is termed the lui of the main figure. Unless other wise specified, all the figures open easily without tangling by being laid on a flat surface and picked up in the middle point of the radial and ulnar strings of the figure.

Native Terminology

A string figure is termed waiwai; to make a figure is wai. To describe movements the fingers are distinguished as follows: thumb, matua; index, middle and ring fingers, all called loa; little finger, lewu. Any confusion which results from not distinguishing index, middle and ring fingers is resolved by personal correction of the pupil by the expert. The word tui means proximally to pick up palmar strings with the indices, that is, to proceed from position 1 to opening A. Tui also means proximally to draw back a string; thus, Tui i-a loa ki-a lewu, means: with the index finger proximally draw back the little finger radial string. Nape is distally to carry back a string. Ui is proximally to remove a loop

 from one finger and is distinguished from ui yala which is distally to remove a loop from a finger. Tatao is to place fingers (usually the ring and middle) on a string and hold it. Lalao is to pass proximal and ulnar to a string, which is then carried back from the ulnar side. Kati is to navaho, usually done by the Pukapukan with the mouth. Takavili is to rotate: takavili ki lalo, rotate in an ulnar direction; takavili ki lunga rotate in a radial direction. Maka is to drop fingers or finger: maka i-a lewu, drop little fingers.

Pukapukan Figures

Te-imu-o-Wale-Puapua (the-oven-of-Wale-Puapua)

1. Opening A.
2. Thumbs, distal to intermediate strings, distally draw back little finger ulnars,
3. Middle fingers, distal to index strings, proximally draw back thumb ulnars, dropping thumbs.
4. Thumbs, proximal to intermediate strings, proximally draw back little finger radials.
5. Thumbs; distal to index strings, proximally draw back middle finger radials.
6. Navaho thumbs.
7. Drop middle fingers.
8. Repeat 3.
9. Repeat 4, dropping little fingers.
10. Repeat 5, dropping middle fingers.
11. Middle and ring fingers, proximal to index strings, placed distally on thumb ulnars.
12. Thumbs proximally into index finger loops.
13. Navaho double proximal thumb radials.
14. Thumbs distally remove index loops.
15. Indices, from ulnar distal side, draw back middle and ring finger radials, dropping thumbs. (Figure 1.) For the lui (figure 2) drop indices.

Te-imu-o-Tiroa (The-oven-of-Tima).

1. Opening A.
2. Thumbs, distal to index strings, distally draw back little finger ulnars.
3. Middle fingers, distal to index strings, proximally draw back thumb ulnars, dropping thumbs.
4. Thumbs pass proximally through index loops and, proximal to middle finger strings, draw back little finger radials.

5. Thumbs, distal to index strings, proximally in middle finger loops.
6. Navaho thumbs; drop middle fingers.
7. Middle fingers, distal to index strings, proximally remove thumb loops.
8. Thumbs, proximal to intermediate strings, proximally draw back little finger radials.
9. Thumbs, distal to index strings, proximally into middle finger loops.
10. Drop middle and little fingers.
11. Middle and ring fingers, proximal to index strings, placed distally on thumb ulnars.
12. Thumbs proximally into index loops.
13. Navaho thumb double proximal radials.
14. Thumbs distally remove index loops.
15. Indices from ulnar side draw back middle and ring finger radials, dropping thumbs. (Figure 3.)

For the lui (figure 4) of this figure, a larger oven, drop index fingers.

Lua-tangata-wetu-i-te-akau (Two-men-standing-on-reef).

1. Opening A.
2. Thumbs, distal to index strings, distally draw back little finger ulnars.
3. Middle fingers, distal to index strings, proximally draw back thumb ulnars, dropping thumbs.
4. Thumbs pass distally though index loops and, proximal to middle finger strings, proximally draw back little finger radials.
5. Thumbs, distal to index strings, proximally into middle finger loops.
6. Navaho thumbs; drop middle fingers.
7. Middle fingers, distal to index strings, proximally remove thumb loops.
8. Thumbs, proximal to intermediate strings, proximally draw back little finger radials, dropping little fingers.
9. Thumbs, distal to index strings, proximally remove middle finger loops.
10. Middle and ring fingers, proximal to index strings, placed distally on thumb ulnars.
11. Thumbs proximally into index loops.
12. Navaho thumb double proximal radials.
13. Thumbs distally remove index loops.
14. Indices from ulnar side draw back middle and ring finger radials, dropping thumbs. (Figure 5.)

For the lui (figure 6) in which the two men are seen with their fishing rods and baskets, drop indices.

524 Te-ikapaetai (Turtle)

1. Opening A.
2. Middle fingers proximally remove index loops.
3. Indices proximally remove thumb loops.
4. Right thumb placed distally on index radial; rotate in ulnar direction back to position.
5. Left thumb proximally draws back right thumb palmar string.
6. Thumbs, distal to intermediate strings, distally draw back little finger ulnars.
7. Middle fingers, distal to index strings, proximally draw back thumb ulnars, dropping thumbs.
8. Thumbs, proximal to intermediate strings, proximally draw back little finger radials.
9. Thumbs, distal to index strings, proximally draw back middle finger distal radials.
10. Navaho thumbs.
11. Drop middle finger distal loops.
12. Middle fingers proximally remove thumb loops.
13. Repeat 8.
14. Repeat 9.
15. Drop middle finger distal loops.
16. Drop little fingers.
17. Indices distally remove middle finger loops.
18. Middle and ring fingers, proximal to index strings, placed distally on thumb ulnars.
19. Thumbs proximally into index finger loops.
20. Navaho double proximal thumb radials.
21. Thumbs distally remove index loops.
22. Indices, distally from ulnar side, draw back middle and ring finger radials, dropping thumbs (Figure 7)

For the lui of this figure, drop indices.

Te-papanga-o-te-waulua (The-platform-of-the-double-canoe.)

1. Opening A.
2. Middle fingers proximally remove index loops.
3. Indices proximally remove thumb loops.
4. Right thumb placed distally on index radial; rotate in ulnar direction back to position.
5. Left thumb proximally draws back right thumb palmar string.
6. Thumbs, distal to intermediate strings, distally draw back little finger ulnars.
7. Middle fingers, distal to index strings, proximally draw back thumb ulnars, dropping thumbs.

●524 8. Thumbs, distal to intermediate proximal strings, proximal to distal middle finger strings, proximally draw back little finger radials.
9. Thumbs proximally into middle finger distal loops.
10. Navaho thumbs.
11. Drop middle finger distal loops.
12. Middle fingers, distal to index strings, proximally draw back thumb ulnars, dropping thumbs.
13. Repeat 8.
14. Repeat 9, dropping middle finger distal loops and little fingers.
15. Middle fingers, from radial side of thumbs distally remove thumb proximal loops.
16. Thumbs proximally remove middle finger distal loops.
17. Repeat 15.
18. Repeat 16.
19. One at a time, rotate thumbs radially.
20. Indices distally remove middle finger loops.
21. Middle and ring fingers, proximal to index strings, placed distally on thumb ulnars.
22. Thumbs proximally into index loops.
23. Navaho thumb proximal double radials.
24. Thumbs distally remove index loops.
25. Indices, from ulnar distal side, draw back middle and ring finger radials, dropping thumbs. (Figure 8) Drop indices and stretch for the lui.

Te-langi-loa (The-tall-sky).

1. Opening A.
2. Thumbs, distal to index strings, distally draw back little finger ulnars.
3. Middle fingers, distal to index strings, proximally draw back thumb ulnars, dropping thumbs.
4. Thumbs, distal to index strings, proximal to middle finger strings, proximally draw back little finger radials.
5. Thumbs proximally into middle finger loops.
6. Navaho thumbs; drop middle fingers.
7. Middle fingers, distal to index strings, proximally remove thumb loops.
8. Thumbs, passing distally through index loop, proximally draw back little finger radials.
9. Thumbs proximally remove middle finger loops.
10. Drop little fingers.

● 524 11. Middle fingers, from radial side of thumbs, distally remove thumb proximal loops.
12. Thumbs proximally remove middle finger loops.
13. Repeat 11.
14. Repeat 12.
15. Rotate thumbs in radial direction.
16. Middle and ring fingers, proximal to index strings, placed distally on thumb ulnars.
17. Thumbs proximally into index loops.
18. Navaho thumb double proximal radials.
19. Thumbs distally remove index loops.
20. Indices, from ulnar side, draw back middle and ring finger radials, dropping thumbs, (Figure 9).

For the lui (figure 10) of this figure, drop index loops and stretch.

Taku-laukape (My-turtle-fat).

1. Opening A.
2. Drop thumbs.
3. Right index finger, distal to all strings, pick up little finger ulnar from ulnar side and continues rotation back to position.
4. Left index finger proximally draws back right index distal palmar string.
5. Thumbs, proximal to index strings, proximally draw back little finger radials and, from the ulnar side, index proximal ulnars.
6. Navaho thumbs.
7. Thumbs, distal to proximal index strings, proximally into distal index loops.
8. Navaho thumbs.
9. Drop distal index loops.
10. Indices proximally remove thumb loops.
11. Thumbs, proximal to index strings, proximally draw back little finger radials.
12. Thumbs, distal to proximal index loops, proximally draw back distal index radials.
13. Middle fingers, distal to index ulnars, proximally draw back index radials.
14. Navaho thumbs.
15. Drop little fingers, turning palms out. (Figure 11).

Na-wiwi (The-crossings).

1. Opening A.
2. Drop thumbs.
3. Right index finger, distal to all strings, picks up little finger ulnar from ulnar side and continues rotation back to position.

4. Left index finger proximally draws back right index distal palmar string.
5. Thumbs, proximal to index strings, proximally draw back little finger radials.
6. Thumbs, distal to proximal index strings, proximally into distal index loops.
7. Navaho thumbs.
8. Drop distal index loops.
9. Indices proximally remove thumb loops.
10. Repeat 5.
11. Thumbs, distal to proximal index loops, proximally draw back distal index radials.
12. Middle fingers, distal to index ulnars, draw back index radials.
13. Navaho thumbs.
14. Drop little fingers, turning palms out. (Figure 12).

Te-va-o-Manuyiki-ma-Lakawanga (The-space-between-Manihiki-and-Rakahanga).

1. Opening A.
2. Drop thumbs.
3. Left index finger, distal to all strings, picks up left little finger ulnar from ulnar side and continues rotation back to position.
4. Right index finger proximally draws back left index distal palmar string.
5. Thumbs, proximal to index strings, draw back from the ulnar side proximal index ulnars.
6. Thumbs, distal to proximal index strings, proximally into distal index loops.
7. Navaho thumbs.
8. Drop distal index loops.
9. Indices distally remove thumb loops.
10. Thumbs distally into proximal index loops, draw back from ulnar side both proximal and distal index ulnars.
11. Middle fingers, distal to distal index radials, proximally draw back proximal index radials.
12. Navaho thumbs.
13. Drop little fingers and stretch figure until the middle loops of the figure separate. (Figure 13).

Te-pitopito-i-Kolo [The-navel-in-Kolo (?)]

1. Opening A.
2. Drop thumbs.

●524 3. Right index finger, distal to all strings, picks up little finger ulnar from ulnar side and continues rotation back to position.
4. Left index finger proximally draws back right index distal palmar string.
5. Thumbs, proximal to index strings, proximally draw back little finger radials.
6. Thumbs, distal to proximal index strings, proximally into distal index loops.
7. Navaho thumbs.
8. Drop distal index finger loops.
9. Indices distally remove thumb loops.
10. Thumbs, distally into proximal index loops, draw back from ulnar side both proximal and distal index ulnars.
11. Middle fingers, distal to distal index radials, proximally draw back proximal index radials.
12. Navaho thumbs.
13. Drop little fingers. (Figure 14).

Te-kapu-ta-ika (Meaning unknown).

1. Opening A.
2. Drop thumbs.
3. Right index, distal to all strings, picks up little finger ulnar from ulnar side and continues rotation back to position.
4. Left index finger proximally draws back right index distal palmar string.
5. Thumbs, proximal to index strings, draw back from the ulnar side proximal index ulnars.
6. Thumbs, distal to proximal index strings, proximally into distal index loops.
7. Navaho thumbs.
8. Drop distal index loops.
9. Indices distally remove thumb loops.
10. Thumbs distally into proximal index loops, draw back from ulnar side both proximal and distal index radials.
11. Middle fingers, distal to distal index radials, proximally draw back proximal index radials.
12. Navaho thumbs.
13. Drop little fingers (Figure 15).

Kau-a-pulaka (Pulaka-stalks).

1. Opening A with a doubled string.
2. Drop thumbs.
3. Separate double index loops into proximal and distal loops.

●524 4. Thumbs, proximal to index strings, draw back from the ulnar side proximal index ulnars.
5. Thumbs, distal to proximal index strings, proximally into distal index loops.
6. Navaho thumbs.
7. Drop distal index loops.
8. Indices distally remove thumb loops.
9. Thumbs distally into proximal index loops, draw back from ulnar side both proximal and distal index ulnars.
10. Middle fingers, distal to distal index radials, proximally draw back proximal index radials.
11. Navaho thumbs.
12. Drop little fingers. (Figure 16.)

Te-ponaunau (meaning unknown).

1. Opening A.
2. Slip index loops over wrists.
3. Thumbs proximally draw back little finger radials.
4. Little fingers proximally draw back thumb ulnars.
5. Each hand separately: with opposite hand remove double palmar strings, hold while wrist loop is slipped back over thumb. Replace palmar strings across palms, behind little and index fingers.

524 539 [533] 6. Thumbs proximally into loops formed by index radials and little finger ulnars. Turn palms out (figure 17) and move thumbs in and out (stretching in ulnar direction and releasing radially) to the rhythm of the chant (All syllables are short and the whole is sung quickly)

Te ponaunau, te ponaunau,
Te potia ua, te potia ua,
Ua lele, ua lele,
Poloiti polo lau mea mea
Aleuei, aluei, pa na, pa na
E tu o o ie e, motu e taiti e,
} Meaning obscure

Motu la Manuyiki laua ma Lakawanga. — Severed are they, Manihiki and Rakahanga.

As the last line is sung, the thumbs are released and the figure opens. (Figure 18.)

524 Katatuna (Mosquito-larvae).

1. Opening A.
2. Middle fingers proximally remove index loops.
3. Indices proximally remove thumb loops.
4. Right thumb distally on index radial, rotate back to position.

●524 5. Left thumb proximally draws back right thumb palmar string.
6. Thumbs, distal to intermediate strings, proximally draw back little finger radials.
7. Little fingers, distal to intermediate strings, proximally draw back thumb ulnars.
8. Indices distally into triangles formed by index radial and ulnar strings with palmar strings.
9. Middle fingers distally into oblongs formed by middle finger radial and ulnar strings and palmar string.
10. Drop little fingers and thumbs. (Figure 19). With mouth pick up double strings which run across figure on side nearest the operator. Holding mouth strings, move hands to and from body to rhythm of the chant:

[539] Te katatuna e te wui wui makupuna e, The mosquito larvae of the many, many grandchildren,
Lua vae kolili o Moealo. The two kolili bird (like) legs of Moealo.

Te-pu-o-Mumumaveka (The-hole-of-Mumumaveka).
1. Opening A.
2. Slip index loops over wrists.
3. Thumbs proximally draw back little finger radials.
4. Little fingers proximally draw back thumb ulnars.
5. Right index finger and thumb lift off and hold left palmar strings while left wrist loop is slipped over left index; right index and thumb place held strings back over left palm behind thumb and little finger.
6. Repeat 5 on right hand.
7. Indices proximally pick up palmar index strings of opposite hands. (Figure 20).
8. Navaho indices.
9. Indices distally into and through hectagon formed by distal strings in center of figure down into and through central diamond formed by proximal strings of figure; stretch while allowing index loops to slip down and off the finger tips. (Figure 21).
To open figure, drop indices.

Te-matangi-yauleka (The-gentle-wind). Method 1 a. This is probably the older of two methods of making this figure. It was known only to two old men.
1. Position 1 on left hand; opening A on right hand.
2. Right thumb proximally draws back right index

radial. Left thumb proximally draws back left little finger radial.

3. Left index finger proximally draws back left thumb ulnar.
4. Navaho thumbs.
5. Drop little fingers.
6. Place ring and little fingers on thumb radials, dropping thumbs.
7. Thumbs, distally inserted between double strings separating ring and index fingers, carry back the dorsal of the two strings.
8. Middle fingers, distal to index ulnars, proximally carry back thumb ulnars.
9. With opposite hand lift off thumb radials, carry them below string held by ring and little fingers, and back on to thumb.
10. Drop ring and little fingers. (Figure 22).

Method 1 b.

A slight variation in this method gives a similar figure known by the same name.

1. Position 1 on both hands.
2. Right index finger distally picks up left palmar string from dorsal side.

Continue with movements 2 to 11 above. (Figure 23).

Te-matangi-yauleka (The-gentle-wind). Method 2. The modern method of making a figure slightly different from that made by the older method.

1. Opening A on left hand; position 1 on right hand. Rotate right little finger in ulnar direction and rotate right thumb in ulnar direction.
2. Right thumb proximally draws back right little finger radial. Left thumb distally draws back left index ulnar.
3. Right middle finger proximally draws back right thumb ulnar. Left middle finger proximally draws back left index radial.
4. Navaho thumbs.
5. Drop little fingers. (Figure 24).

Te-matangi-tavili (The-whirlwind).

1. Opening A on left hand; position 1 on right hand. Rotate right little finger in ulnar direction.
2. Right thumb proximally draws back right little finger radial. Left thumb distally draws back left index finger ulnar.
3. Right middle finger proximally draws back right thumb ulnar. Left middle finger proximally draws back left index radial.

●524 4. Navaho thumbs.
5. Drop little fingers. (Figure 25.)

Te-matangi-taulele (Shifting-wind). Though this figure does not fit into any series, it is here grouped with the other "wind" figures after which it is always made.

1. Double loop string over thumbs, carry remainder behind little fingers across palms.
2. Indices, distal to little finger ulnar, from ulnar side carries back little finger ulnar and rotates distally in ulnar direction through thumb loop back to position.
3. Drop thumbs.
4. Indices distally into little finger loops, rotate in radial direction back to position.
5. Thumbs proximally draw back radial index strings.
6. Drop little fingers. (Figure 26.)

Wala-ola (Growing-pandanus)

1. Opening A.
2. Thumbs, proximal to index strings, proximally into little finger loops. Thumbs rotate in ulnar direction back to position, dropping little fingers.
3. Middle and ring fingers, proximal to index strings, distally placed on thumb ulnars.
4. Thumbs proximally into index loops.
5. Navaho thumbs.
6. Thumbs distally remove index loops.
7. Indices from distal, ulnar side, pick up thumb ulnars, dropping thumbs. (Figure 27.)
   To open figure, drop indices.

Wala-yila-wua (Meaning unknown).

1. Opening A.
2. Thumbs, proximal to index strings, proximally into little finger loops. Thumbs rotate in ulnar direction back to position, dropping little fingers.
3. Middle and ring fingers proximally placed on index radials.
4. Indices distally into thumb loops. Indices rotate in radial direction back to position, dropping middle and ring fingers. (Figure 28.)

Te-liu-wuwuli-ki-lalo (The-inside-turned-down).

1. Position 1.
2. Thumbs proximally pick up opposite hand palmar strings.
3. With mouth pick up left thumb proximal radial and retain.
4. Stretch hands away from mouth, lengthening string held by mouth. Drop mouth string below figure and swing it over figure from ulnar side.

●524 5. With mouth pick up in middle of figure the crossing of thumb ulnars with little finger radials.
6. With hands remove mouth loop and, carrying it in ulnar direction, place it on great toe of right foot. (Figure 29.)
7. Indices pass distal and radial to thumb strings below figure and proximally up into squares formed at juncture of toe strings with little finger ulnars and string ulnar and parallel to them; passing distal to ulnar sides of square, rotate indices in ulnar direction back to position. (Figure 30.)
8. Release toe strings. (Figure 31)
To open, drop indices.

Te-liu-wuwuli-ki-lunga (The-inside-turned-up).
1. Position 1.
2. Little fingers proximally pick up opposite hand palmar strings.
3. With mouth pick up left little finger proximal ulnar string and retain.
4. Stretch hands away from mouth, lengthening string held by mouth. Drop mouth string over figure.
5. With mouth pick up in center of figure the little finger radials and thumb ulnars at the point where they cross. Draw strings taut by stretching hands from mouth.
6. Indices pass ulnar to little finger strings below figure and proximally up into squares formed at juncture of mouth strings with thumb radials and strings running distal and parallel to them; passing distal to radial sides of squares, indices rotate in radial direction back to position.
7. Drop mouth strings. (Figure 32.)
To open, first drop indices, then little fingers.

Paiokiole (Lozenge). A progressive figure.
1. Opening A.
2. Indices distally draw back little finger ulnars.
3. Indices distally remove thumb loops.
4. Indices, passing distal and ulnar to little finger strings rotate in ulnar direction back to position.
5. Thumbs distally remove index loops.
6. Indices distally pick up little finger ulnars from ulnar side, carry these distally through thumb loops, and rotate with them in ulnar direction back to position, dropping thumbs.
7. Rotate indices in radial direction.
8. Thumbs, proximal to index strings, draw back little

524 finger radials.

9. Thumbs proximally into index loops.
10. Navaho thumbs.
11. Drop little fingers. The figure is Kiti-kiti-polo-iti. (Figure 33.)
12. Little fingers (as shown in Fig.33) proximally into two diamonds in middle top of figure and pull out lower outer diamond strings.
13. Drop indices.
14. Indices proximally carry back thumb distal ulnars. Figure is Taoa-kula. (the name of a fish). (Figure 34).
15. Thumbs distally into little finger loops, draw back lower outer diamond strings. Drop little fingers. Figure is Langai-tawola (A school of whales). (Figure 35).
16. Middle and ring fingers proximally hold thumb radials, dropping thumbs.
17. Thumbs distally into loops held by middle and ring fingers, carry back lower outer strings of center diamond, dropping middle fingers. This is Paiokiole. (Figure 36).

As he completes each figure in the series, the operator chants its name, attempting to arrive at the next figure when he finishes pronouncing the name of the last.

Tikonikoni (Copulation).

1. Opening A.
2. Indices distally draw back little finger ulnars.
3. Indices distally remove thumb loops.
4. Indices, passing distal and ulnar to little finger strings, rotate in ulnar direction back to position.
5. Thumbs distally remove index loops.
6. Indices distally pick up little finger ulnars from ulnar side, carry these distally through thumb loops, and rotate with them in ulnar direction back to position, dropping thumbs.
7. Indices rotate in ulnar direction.
8. Thumbs proximally draw back little finger radials.
9. Thumbs proximally into index loops.
10. Navaho thumbs. Drop little fingers. (Figure 37).
11. Little fingers proximally into center triangle of the figure (triangle with base at top of figure and apex at bottom) and carry back strings forming sides of the triangle.
12. Drop indices and pull tight with little fingers, making fast the thumb loops. (Figure 38). Insert ring and

524 middle fingers into little finger loops. Drop thumbs and with other fingers slide figure around on hands.

The operator accompanies the making of this figure with a running commentary, telling how a couple go for a stroll to the bush, cut the lover's bed of coconut leaves (represented by figure 37 in movement 10), and proceed (movement 12) to copulate. He invariably ends by holding the figure in his left hand, saying that his couple now hang in the air.

Te-tau-lunga (The-anchor-above).

1. Position 1 on left hand; opening A on right hand.
2. Rotate left little finger in ulnar direction.
3. Right thumb distally draws back right index ulnar. Left thumb proximally draws back left little finger radial.
4. Right middle finger proximally draws back from radial side right index radial. Left middle finger proximally draws back left thumb ulnar.
5. Navaho thumbs; drop little fingers. (Figure 39).

Te-tau-lalo (The-anchor-below)

1. Position I on left hand; opening A on right hand.
2. Rotate left thumb in ulnar direction.
3. Right thumb distally draws back right index ulnar. Left thumb proximally draws back left little finger radial.
4. Right middle finger proximally draws back from radial side right index radial. Left middle finger proximally draws back left thumb ulnar.
5. Navaho thumbs; drop little fingers. (Figure 40).

Te-kivi-a-te-kakai [The-kivi(?)-of-the-people].

1. Opeing A.
2. Drop thumbs.
3. Thumbs, proximal to all strings, draw back little finger ulnars from ulnar side.
4. Drop little fingers.
5. Thumbs distally carry back index ulnars.
6. Little fingers, distal to index strings, proximally draw back thumb ulnars.
7. Drop thumbs.
8. Thumbs, distal to index strings, proximally draw back little finger radials.
9. Thumbs proximally into index loops at points dorsal to palmar strings.
10. Navaho thumbs.
11. Indices distally into thumb triangles (of which thumb palmar strings constitute the radial sides), and

524 rotate back to position, dropping little fingers. (Figure 41).

Te-kivi a-Yilewu [The-kivi (?)-of-(the man)-Yilewu].

1. Opening A.
2. Pass left index finger loop over right index loop on to the right index finger, placing right index loop on left index finger.
3. Drop thumbs.
4. Thumbs, proximal to all strings, draw back little finger ulnars from ulnar side.
5. Drop little fingers.
6. Thumbs distally carry back index ulnars.
7. Little fingers, distal to index strings, proximally draw back thumb ulnars.
8. Drop thumbs.
9. Thumbs, distal to index strings, proximally draw back little finger radials.
10. Thumbs proximally into index loops at points dorsal to palmar strings.
11. Navaho thumbs.
12. Indices distally into thumb triangles (of which thumb palmar strings are the radial sides), and rotate back to position, dropping little fingers. (Figure 42).

Te-imu-o-Te Lautalo (The-oven-of-Te-Lautalo).

1. Opening A.
2. Thumbs, distal to index strings, proximally from ulnar side draw back little finger radials and ulnars.
3. Middle fingers, distal to index strings, proximally draw back thumb ulnars, dropping thumbs.
4. Thumbs proximally on index ulnars.
5. Indices proximally into middle finger loops, carry back middle finger ulnars, which are proximally taken up by thumbs which return to position as the middle fingers and indices are dropped and the figure stretched on thumbs and little fingers. (Figure 43).

Te-tavatava-o-te-wui-kiole [The-tavatava-(trap?)-of-the rats].

1. Position 1 on left hand; opening A on right.
2. Left thumb proximally removes left little finger loop.
3. Left little finger, distal and radial to distal thumb strings, distally removes thumb proximal loop.
4. Repeat 2 and 3.
5. Repeat 2 and 3.

● 524 6. Repeat 2 and 3.
7. Left index finger proximally picks up right index palmar string.
8. Drop right index loop and, gently stretching right hand out, wiggle the rat (dropped loop) (Figure 44)
[539] along towards the left hand to the rhythm of the chant:

Te kiole e, ata ngingi,	O rat, good at crying "Ngingi",
E totolo koe i te taupoto,	You crawl on the roof's ridge,
E leio koe ki te tala lewu,	You jump down to the gable end,
Koa patua koe e te tangata,	You are killed by the people,
Koa tu to paepae watu.	They erect your gravestones.

Te-la-palepale (The-setting-sun)
1. Opening A.
2. Drop thumbs.
3. Index fingers proximally remove little finger loops.
4. Thumbs distally draw back index proximal ulnars.
5. Thumbs distally draw back index distal ulnars.
6. Middle fingers, distal to index distal radials, proximally draw back index proximal radials.
7. Navaho thumbs. (Figure 45).

Moamoa (name of a coral organism).
1. Opening A.
2. Drop thumbs.
3. Indices proximally remove little finger loops.
4. Thumbs, proximal to proximal index strings, draw back from ulnar side proximal index ulnars.
5. Thumbs, distal to proximal index strings, proximal to distal index strings, draw back from ulnar side distal index ulnars.
6. Middle fingers distal to distal index strings proximally draw back proximal index radials.
7. Navaho thumbs. Turn palms out. (Figure 46).

Te-wua-ya-valu (The-fleet-of-eight).
1. With right hand, loop string across palm and back of left hand ulnar to thumb, then wind hanging dorsal string 6 times around left hand and fingers, each succeeding loop distal to the former. Place final dorsal string of 6th loop between left ring and little fingers, and hold thus.
2. With right hand, pick up end of hanging dorsal

524 string and make a loop in it by crossing dextral string behind sinistral string. Pass crossing pair of strings, at point where they cross, from ulnar side, under palmar strings of left hand.

3. Little finger and thumb of right hand take up hanging double distal loops. Little finger and thumb of right hand take up two proximal loops of strings slipped under palmar strings.
4. Let palmar strings slip on to the middle of figure as hands are stretched apart. Separate the loops in the middle of the figure to represent canoe sterns. (Figure 47).

Te-tai-kiki (The-tide-going-out).

1. Double loop string over thumbs, remainder over palms behind thumbs.
2. Indices proximally draw back thumb ulnars, dropping thumbs.
3. Thumbs, passing proximal and ulnar to little finger strings, proximally into index loops, rotate in ulnar direction back to position, dropping indices.
4. Thumbs proximally draw back little finger radials.
5. Indices proximally draw back thumb ulnars. (Fig. 48). Drop thumbs.

Repeating indefinitely movements 2 to 5, the figure (the tide) becomes smaller (lower) each time (figs. 49 and 50) until only a line is visible in the center.

To show tide flowing in again and to open figure, place figure on flat surface; with left hand pick up loops previously held by right hand and with right hand loops previously held by left hand. Then repeat again movements 2 to 5 until tide is well in and the figure open.

Matua kalou [name of a type of eel (?)]. A progressive figure.

1. Position 1 on right hand. With left hand revolve hanging string twice, making a double cross in center; take up position 1 on left hand; proceed to opening A.
2. Thumbs, distal to index strings, distally draw back little finger ulnars.
3. Navaho thumbs. Figure is Matua kalou. (Figure 51.)
4. Drop thumbs.
5. Indices distally in little finger loops, rotate in distal direction back to position. Figure is Ui kauana. (Figure 52.)
6. Thumbs proximally draw back index radials which do not pass to little fingers.
7. Drop little fingers. Figure is Ui lalapa. (Figure 53.)

●524 Te-ko-lemu-yengiyengi (The-yellow-anus).

1. Position 1.
2. Indices proximally draw back little finger ulnars.
3. Thumbs, distal to index radials, proximally draw back little finger ulnars.
4. Navaho thumbs. (Figure 54.)

[539] Work thumbs and fingers in and out to the rhythm of the chant:

Te ko lemu yengiyengi e,	The yellow anus,
Te ko lemu yengiyengi e,	The yellow anus,
Titiko i tua, titiko i tai,	Defecates at the back beach, defecates at lagoon beach,
Te ko lemu yengiyengi e.	The yellow anus.

Tava (meaning unknown). Played by two people.

First player:

1. Opening A.
2. Drop little fingers.
3. Indices proximally remove thumb loops.
4. Thumbs distally draw back proximal index ulnars.
5. Thumbs distally draw back distal index ulnars.
6. Middle fingers, distal to distal index radials, proximally draw back from ulnar side proximal index radials.
7. Navaho thumbs. Stretch right hand forward, bring left hand inward to body, turn both palms up and stretch figure. (Figure 55.)

Second player takes up figure by process called tui (to sew).

8. At end of figure held by first player's right hand, insert little fingers distally into two outer triangles (held by first player's thumb and middle finger).
9. Pass thumbs distally into and through next outer triangles and proximally up out of next outer triangles.
10. Insert little fingers into two outer radial loops held by first player's left thumb and middle finger.

First player removes all his fingers. Figure is Tava. (Figure 56.)

First player proximally inserts thumb and index of each hand into each of two outer loops of figure held by other players's thumb and index of right hand, second player dropping his hold on those two loops while taking hold proximally of each of the other two loops with thumb and index of each hand. (Figure 57.)

Together the players count: tai tava (one tava), lua tava, tolu tava, and on up through 10 tava, both players with indices

524 distally drawing back central "diamond" outer strings, releasing thumbs, and thus reproducing the same figure, Tava, for each count. Then with their hands players raise and lower the figure to the rhythm of the chant:

[539] Pa pa talinga ti lele, (?)
Pa pa talinga ti lele, (?)
Te wale o Matano — The house at Matano
E kau lua te pola — Has twenty thatch sheets
Te wale o Matano — The house at Matano
E kau lua te pola. — Has twenty thatch sheets

The figure is then laid on a flat surface and opened out to give the figure which resulted in movement 7, by picking up distally the distal of the two sets of loops on the dextral side of the figure and carrying these to the left. The next player now repeats movements 8 to 10, the sewing process, and the game is repeated indefinitely.

Taku-pu-lele-lua (My-hole-becomes-two).

1. Opening A.
2. Ring fingers proximally remove index finger loops.
3. Middle fingers proximally remove thumb loops.
4. Right thumb, distally on index radial, rotates back to position.
5. Left index finger proximally draws back right thumb palmar string.
6. Right index finger proximally removes right thumb loop.
7. Right thumb distally on index radial, rotates back to position.
8. Left thumb proximally draws back right thumb palmar string.
9. Thumbs, distal to intermediate strings, distally draw back little finger ulnars.
10. Little fingers, distal to intermediate strings, proximally draw back thumb ulnars.
11. Indices distally into triangles formed by index radial and ulnar strings with palmar strings.
12. Middle fingers distally into oblongs formed by middle finger radial and ulnar strings and palmar string.
13. Ring fingers distally into oblongs formed by ring finger radial and ulnar strings with palmar strings.
14. Drop little fingers and thumbs. This is the first "hole". (Figure 58.)
15. Drop indices for the second hole. (Figure 59.)

Te-pu-a-loto (a canoe name).

1. Double the string and loop it over thumbs.
2. Indices distally draw back thumb radials.

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3. Right thumb proximally draws back left thumb radial-palmar string.
4. With teeth pick up right thumb double proximal strings from distal side, carry these over right thumb and to center of the figure, retaining hold with teeth.
5. Indices distally into thumb loops, rotate back to position.
6. Middle and ring fingers press down from ulnar side on index finger distal ulnars.
7. Release mouth strings. (Figure 60.)
   Open by releasing thumbs and indices. (Figure 73)

Te-itu-wala-kula (pandanus-fruit-with-ripe-keys).

1. Position 1.
2. Pass right hand dorsally through left hand loop and left hand dorsally through right hand loop.
3. Indices proximally pick up opposite hand palmar strings.
4. Slip index loops over wrists.
5. Indices distally pick up little finger radials and proceed distally into thumb loops, rotating in ulnar direction back to position.
6. Drop thumbs.
7. Thumbs proximally remove index finger loops.
8. With opposite hand, pick up double wrist loops and place them across palms behind thumbs and little fingers.
9. Repeat 5.
10. Drop little fingers.
11. Little fingers proximally remove index finger loops.
12. Indices pass from ulnar-proximal side below string running parallel and ulnar to ulnar thumb string, over the intersecting diagonal string, and under ulnar thumb string.
13. Drop thumbs and without stretching figure pick up proximally the distal index finger radials hanging down toward thumb. (Figure 61.)
    For the lui of this figure, drop little fingers.

Te-tala-o-te-yamāyama [The-story-(?)-of-the seaweed].

1. Opening A.
2. Thumbs, distal to index strings, proximal to little finger strings, pick up from ulnar side, little finger ulnars, returning to position proximal to little finger radials.

●524 3. Right little finger, proximal to right index strings, proximally draws back through its own loop right thumb ulnar.

4. Left little finger, proximal to left index strings, draws back through its own loop, from radial side, left index radial.

5. Navaho thumbs inversely: with mouth, draw back distal thumb radials under proximal thumb radials and drop them over on the ulnar side of the thumbs.

6. Indices distally remove thumb loops.

7. Counting upward on either side of the figure from little finger ulnars (which are counted 1), insert thumbs under second, over third, and under fourth strings in figure, drawing back strings 2 and 4. (Figure 62.)

8. Navaho thumbs. (Figure 63.)
For the lui of this figure, drop distal index loops.

Kumete (Food bowl).

1. Opening A.

2. Indices distally into little finger loops, rotate back to position, dropping little fingers.

3. Middle fingers distally press downward on index ulnars.

4. Drop thumbs carefully so that thumb radials fall to the sides of and below figure, forming two central diamonds in figure.

5. Insert thumbs through lower outer triangles into diamonds, drawing back lower outer diamond strings. (Figure 64.)
To open, drop thumbs.

Kupenga (Fishing net).

1. Position 1 on left hand.

2. Loop other end of string around big and second toes of left foot.

3. With right hand draw back string passing behind toes between the toes and place it on left index finger.

4. Place right index proximally on left index ulnar string passing under left little finger ulnar, carrying back the latter.

5. Rotate this latter string (little finger ulnar) under index ulnar.

6. Place right thumb behind, ulnar to, left index ulnar, drop right index, and carry right thumb distal to left index radial.

7. Repeat operation on index radial and thumb strings, inserting thumb proximally into loop remaining.

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8. With right hand draw back from second toe the ulnar second toe string and loop it over little finger.
9. Repeat movements 4 to 7, as often as desired, each time increasing the net's length. (Figure 65.)

The number of warp strings will depend on the length of the original string.

10. Remove all loops off left thumb and hold. Remove loop off left big toe and slip through thumb loops, catching with each thumb an end of the loop slipped through. Repeat this process with little fingers and 2nd toe loops. Then stretch loops apart, spread net meshes, and display on hands. (Figure 66.)

Yele moa (Tie the chicken). Trick figure.

1. Place string around neck. Hold hanging string in both hands. With right hand loop string once around the neck and draw tight.
2. Place sinistrally hanging string over the palm of the left hand so that the string passes behind thumb and little finger and across palm.
3. Pick up dextrally hanging string with right hand and loop it over left hand, the string passing from the radial side parallel to the first string, behind thumb and little fingers, and across palm.
4. Drop little finger on left hand. With fingers of both hands, pick up loop hanging from thumb and place it over the head.

Pull on the loop hanging low on the chest and the string will disengage itself from the neck. As the demonstrator pulls he says, "Motu te ua" (Severed the neck); watchers also call this out when they see someone doing the trick incorrectly.

Hand slip trick. Nameless.

Hold one end of loop in left hand. Right hand passes from radial side through the loop, rotates with wrist turned down and to the right, behind and around dextrally hanging string, passes radially around sinistral hanging string, and reenters loop from ulnar side. Draw right hand out and the strings fall off.

Literature Cited

1. Anderson, J.C., Maori String Figures: Board of Maori Eth. Research, Mem., vol. 2, Wellington, 1927.
2. Beaglehole, Ernest and Pearl Beaglehole, Ethnology of Pukapuka, Bernice P. Bishop Museum Bulletin 150, Honolulu, 1938.

Figure 1. Te-Imu-o-Wale-Puapua

4: Beaglehole-31 E-5 (1934-5) 1953 Pukapukans

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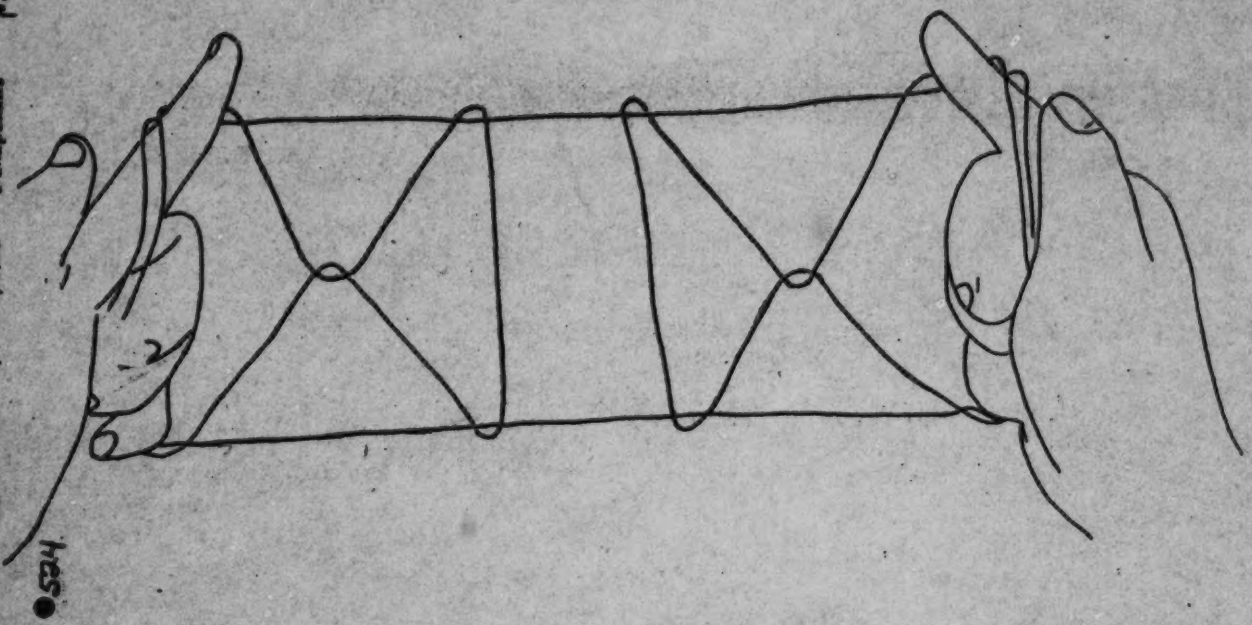
Figure 2. Te-Imu-o-Wale-Puapua (Secondary figure, lui)



4: Beagleholes-E-5 (1934-5) 1953 Pukapukans p.32

4: Beaglehole-M E-5 (1934-5) 1953 Pukapukans

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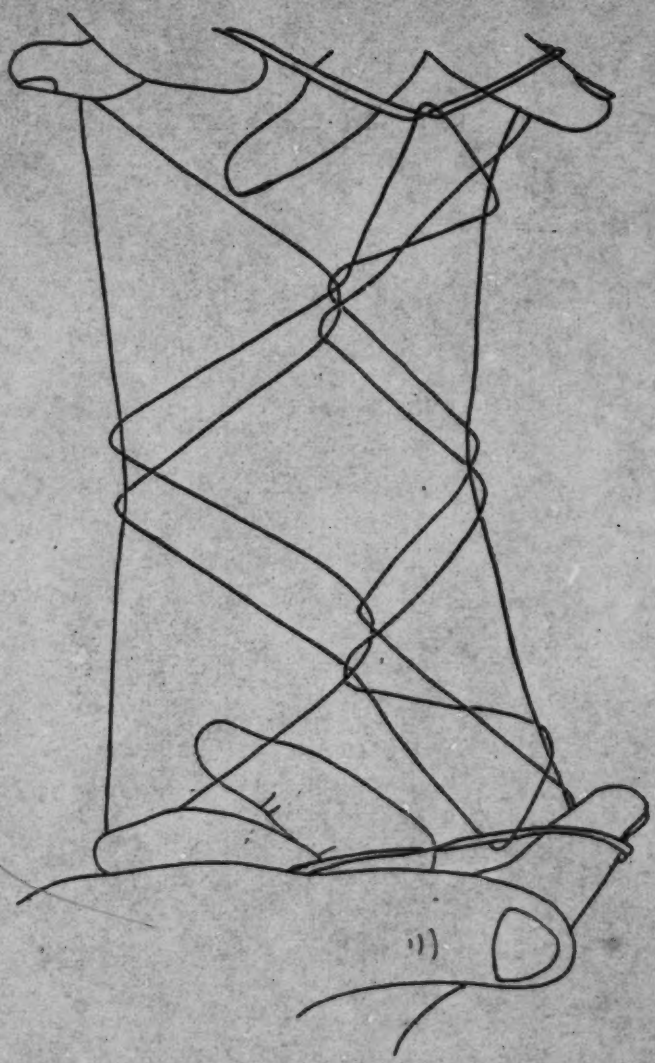
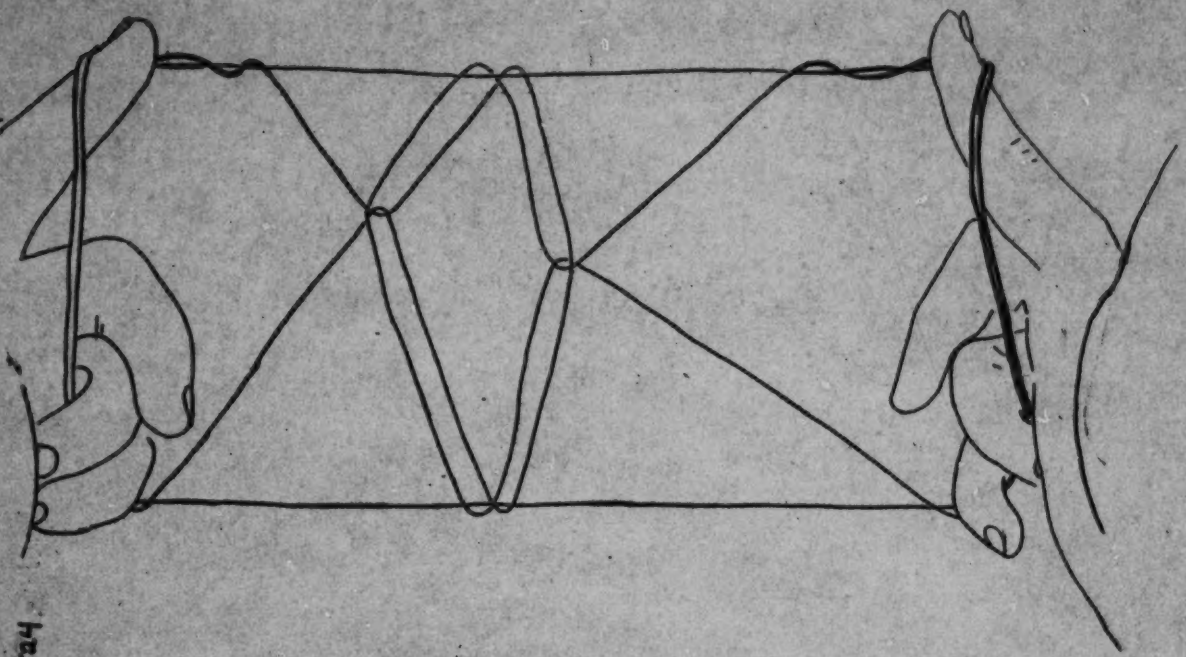


Figure 3. Te-Imu-o-Tima

Figure 4. Te-Imu-o-Tima (Secondary figure, lui)



4: Bazglehole E-3 (1934-5) 1953 Pukapukans p.34

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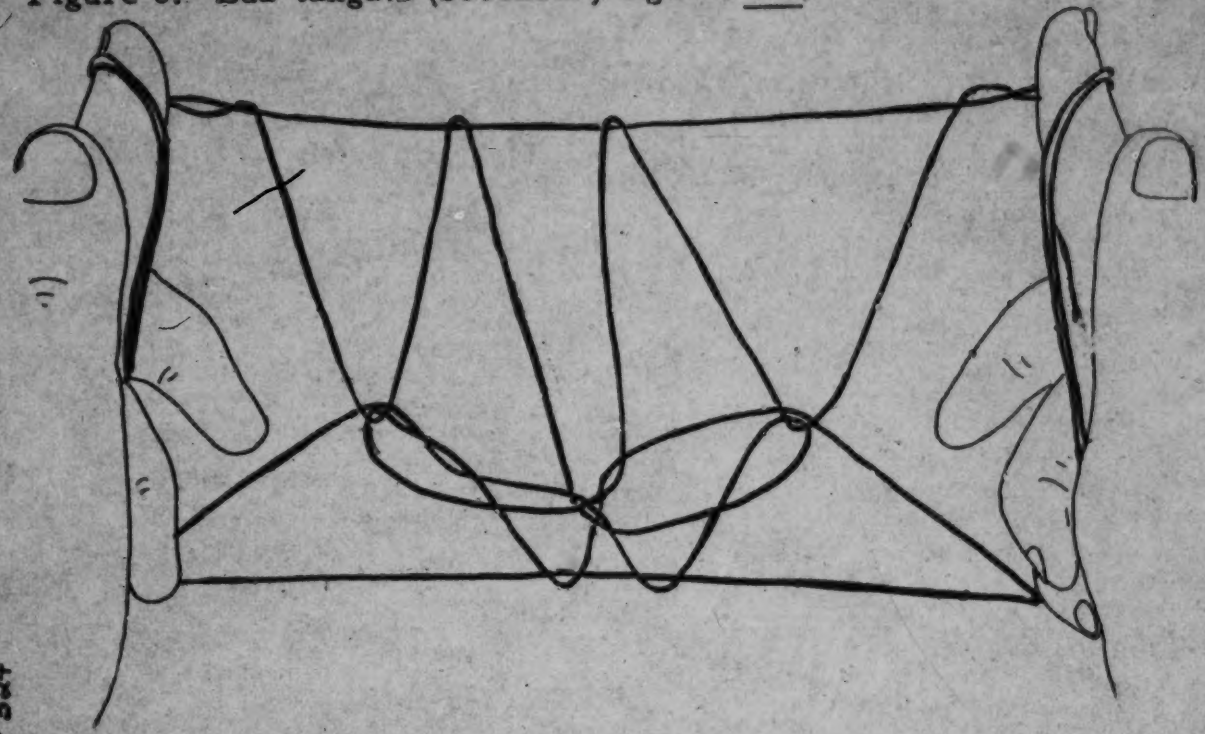
Figure 5. Lua-tangata-wetu-i-te-akau

Figure 6. Lua-tangata (Secondary figure, lui)



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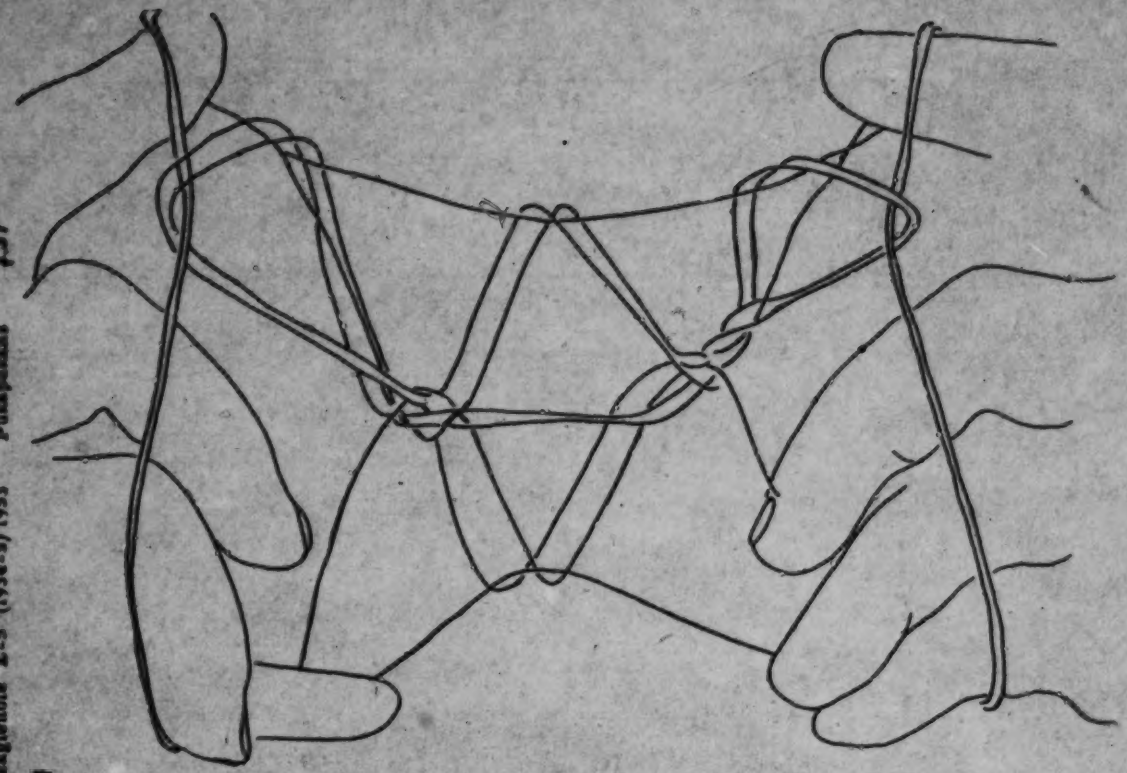

Figure 7. Te-ikapaetai

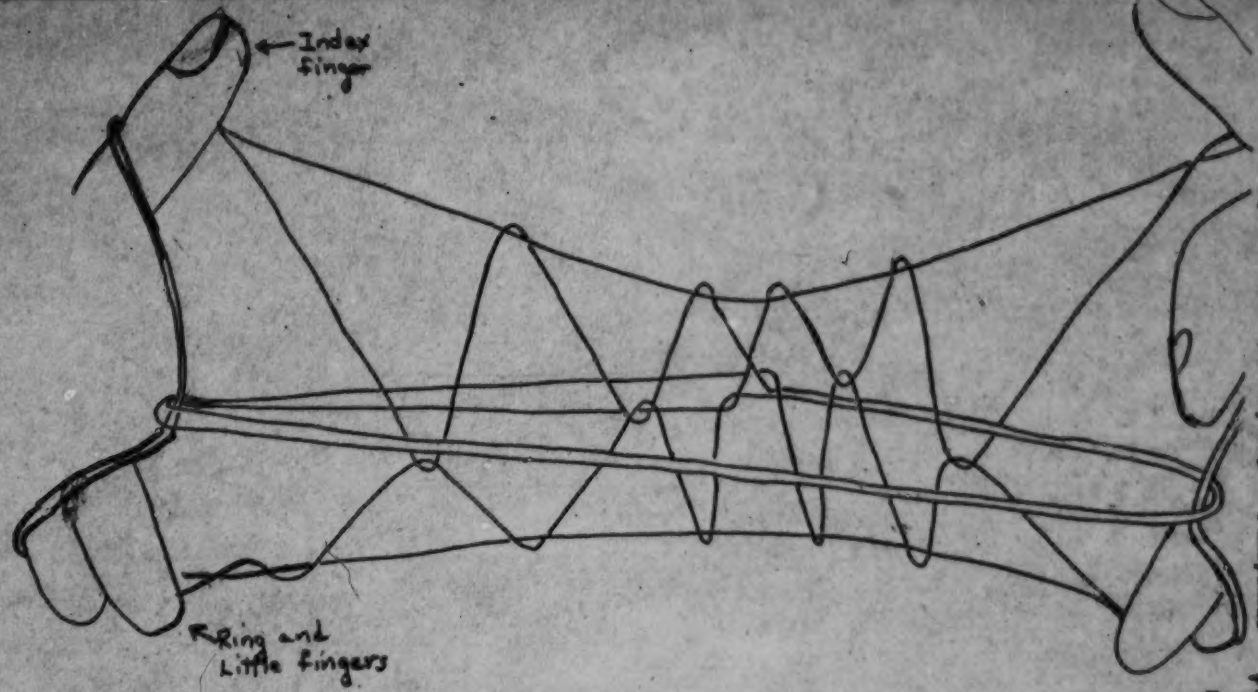

Figure 8. Te-papanga-o-te-waulua

Figure 9. Te-langi-loa

4: Beaglehole-39 E-3 (1934-5) 1953 Pukapukans

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Figure 10. Te-langi-loa (Secondary figure, lui)

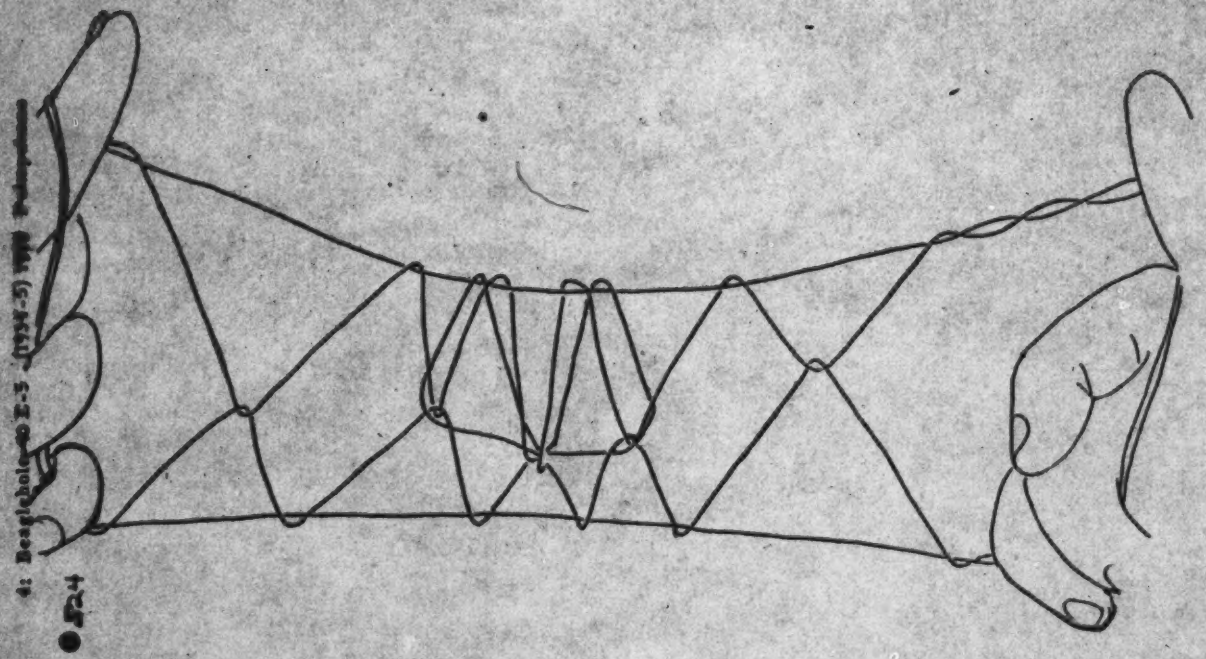
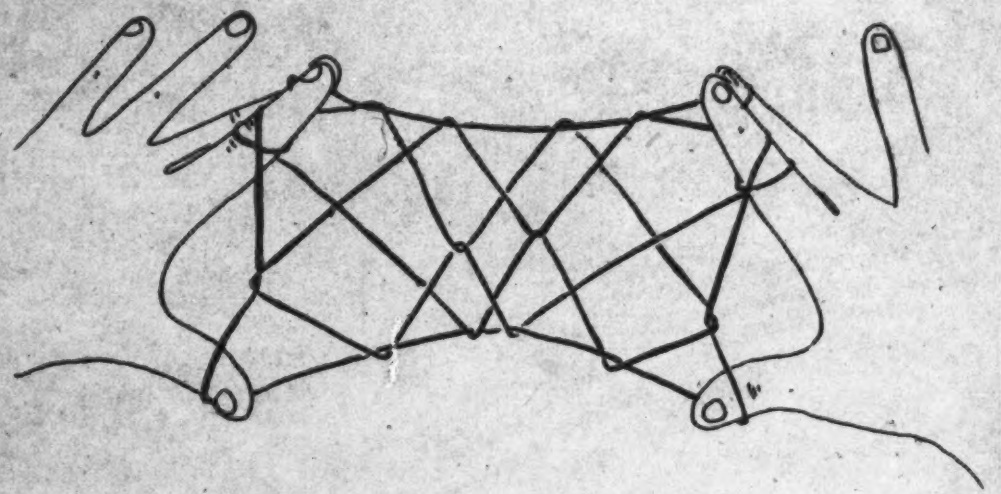


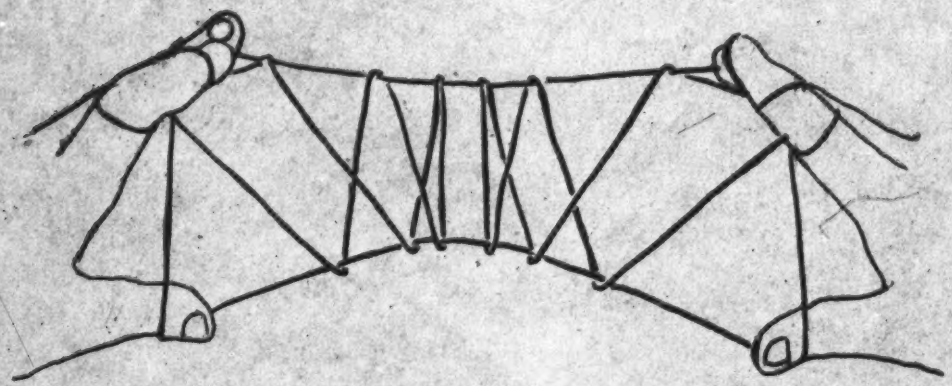
Figure 11. Taku-laukape

Figure 12. Na-wiwi



©: Bergleholz E-5 (1934-5) 1953 Pukapukans

Figure 13. Te-va-o-Manuyiki-ma-Lakawanga



C. Bergsma B.C. (1934-5) 1935 Zakopane p.43

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Figure 14. Te-pitopito-i-Kolo

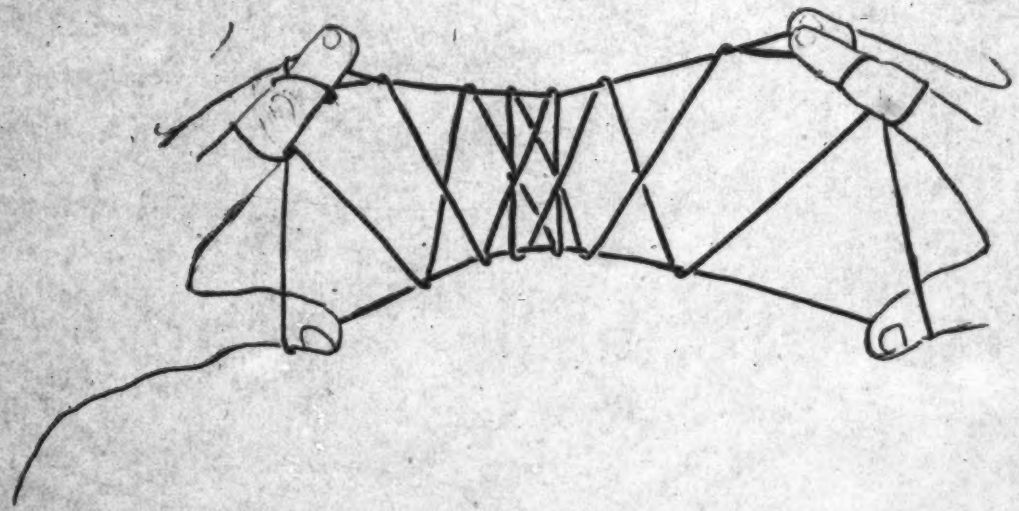
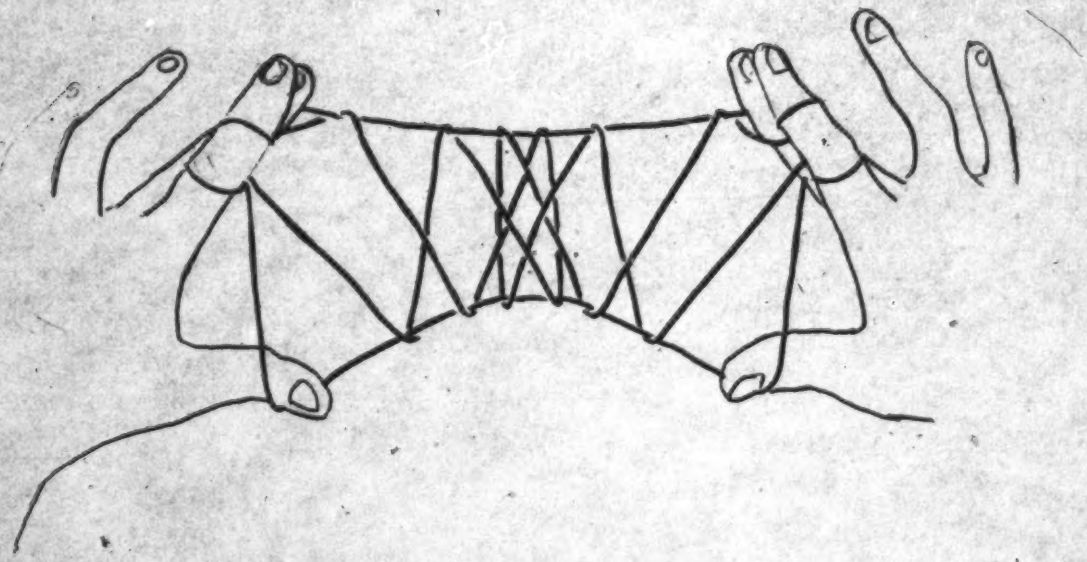


Figure 15. Te-kapu-ta-ika



4. Beagleholes of E-3 (1974-5) 195) Pukapukans

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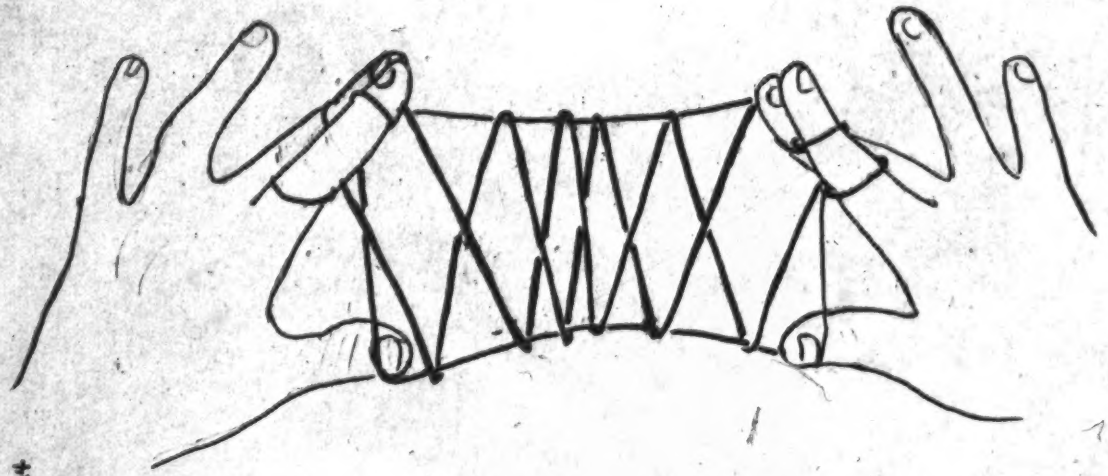
Figure 16. Kau-a-pulaka



4: Beaglehole-46 E-3 (1934-5) 1953 Pukapukans

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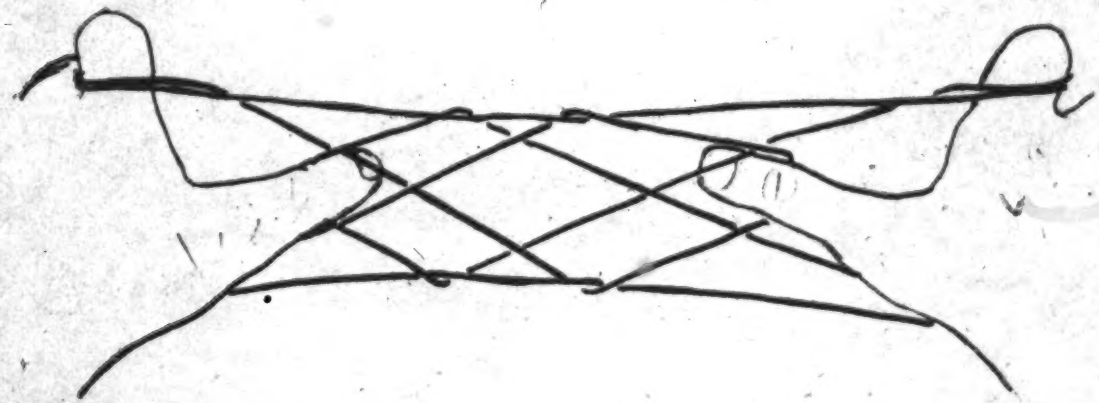
Figure 17. Te-ponaunau

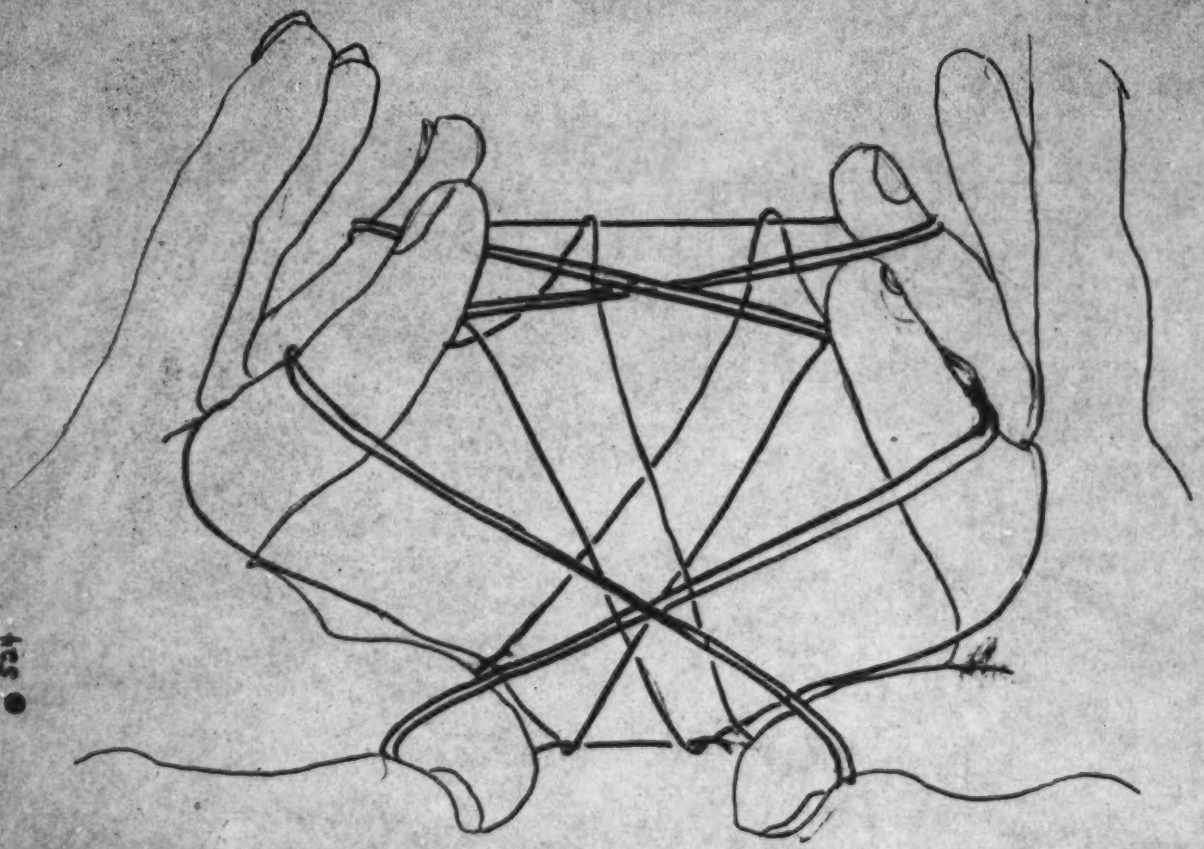


Stanford Anthropological Expedition E-6 (1934-6) 1935 Pukapukans p.47

Figure 18. Te-ponaunau (Secondary figure, lui)

Figure 19. Katatuna

Figure 20. Te-pu-o-Mumumaveka (Movement 7, a three-dimensional figure)



4: Bengtsholc-Ro E-5 (1994-5)(95) Pukapukas

Figure 21. Te-pu-o-Mumumaveka (Completed figure)

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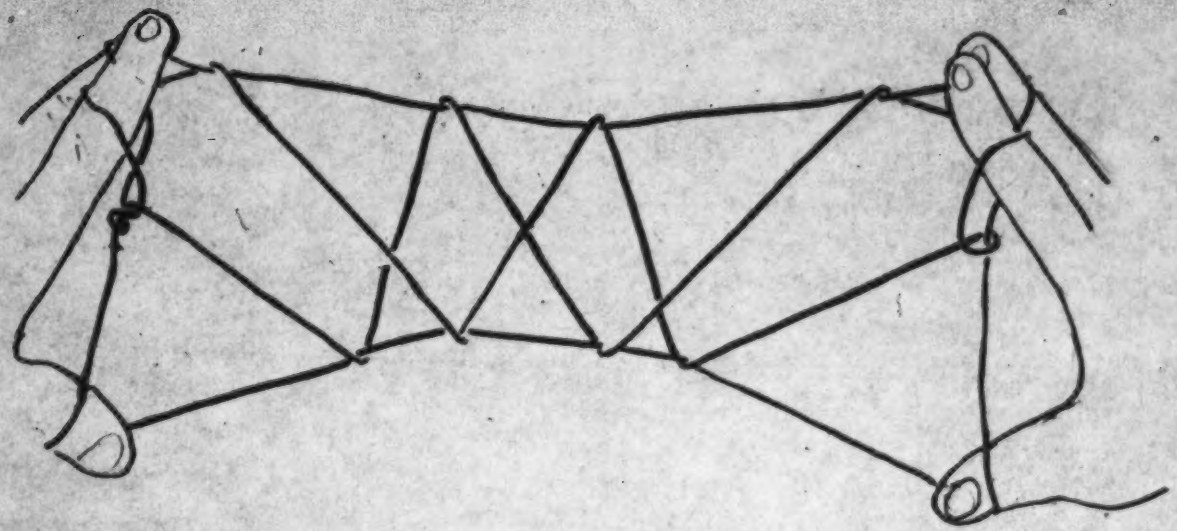
Figure 22. Te-matangi-yauleka (made by method 1 a)



4: Beaglehole-R. E-5 (1934-5) 1953 Pukapukans

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Figure 23. Te-matangi-yauleka (made by method 1b)

Figure 24. Te-matangi-yauleka (made by method 2)

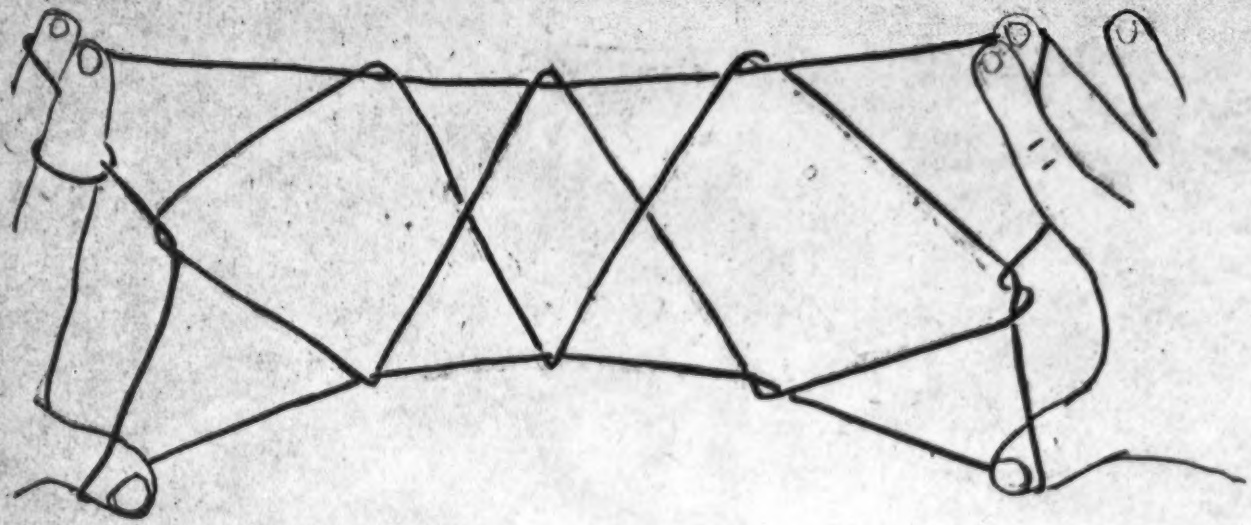

Figure 25. Te-matangi-tavili

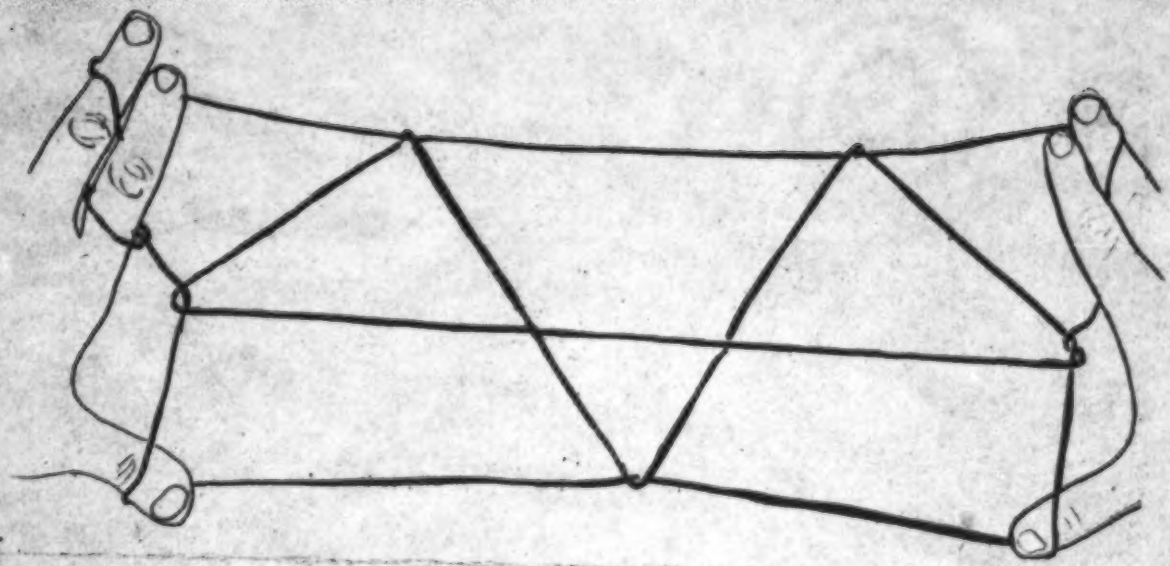

Figure 26. Te-matangi-taulele

4: Beeglehole E-5 (1934-5) 1935 Pukapukans

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Figure 27. Wala-ola

Bishop Museum Bulletin 1953 Pukapukans p. 57
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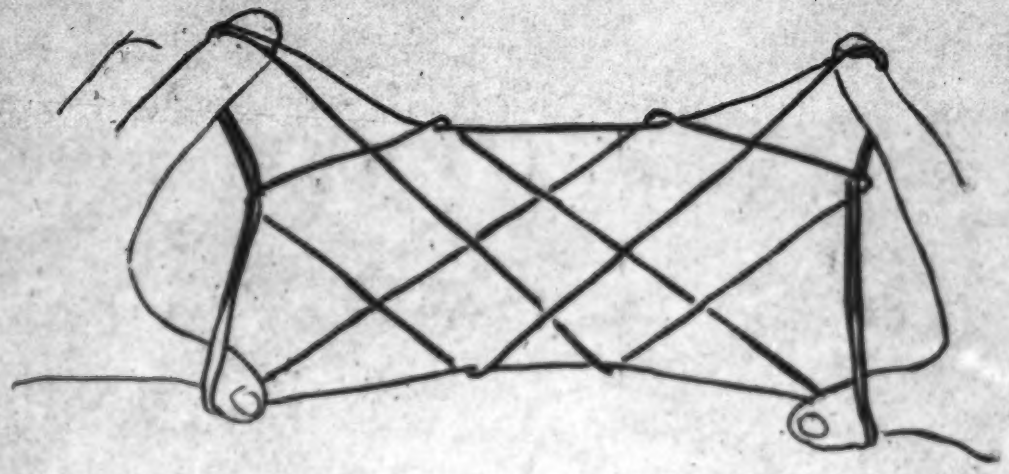

Figure 28. Wala-yila-wua

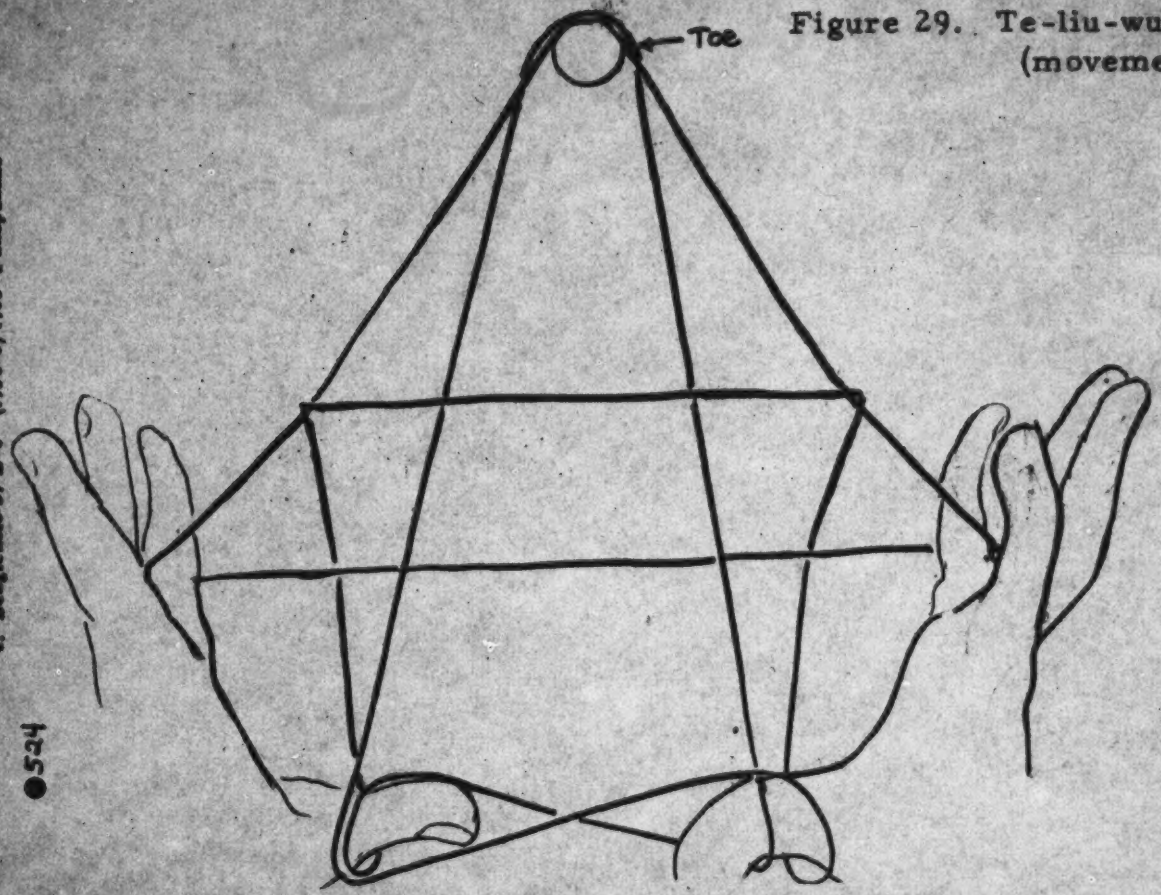

Figure 29. Te-liu-wuwuli-ki-lalo
(movement 6)

4: Bangkok-69 E-5 (1934-5) 1953 Pakapakma

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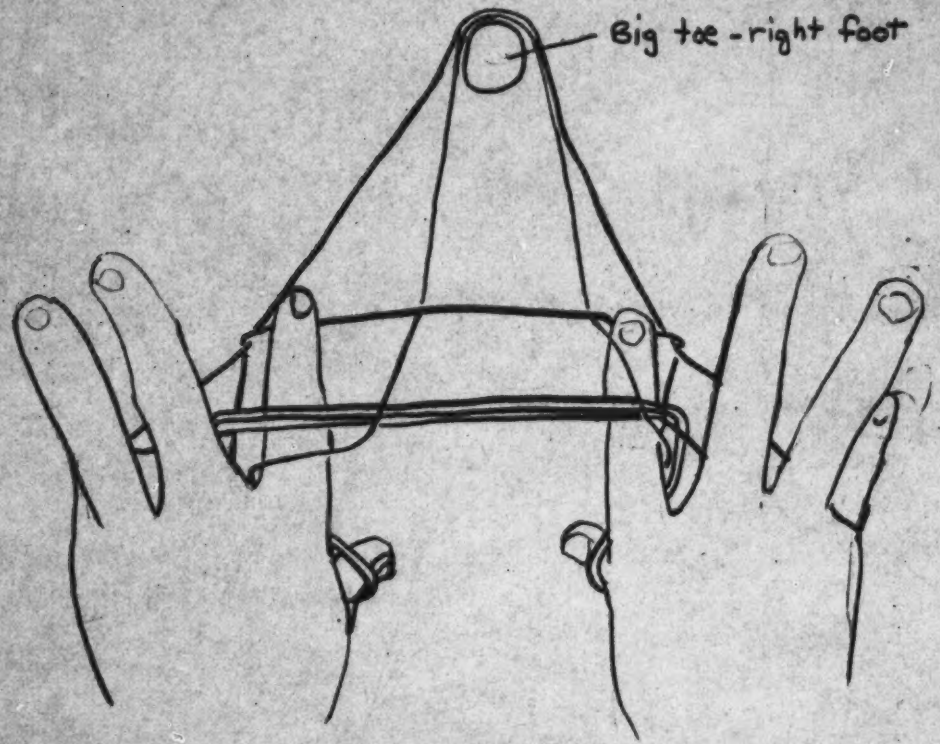
Figure 30. Te-liu-wuwuli-ki-lalo (Movement 7, showing the pickup)



4: Beaglehole-OE-3 (1934-5) 1953 Pukapukans

Figure 31. Te-liu-wuwuli-ki-lalo (the completed three-dimensional figure)

E. Beaglehole E-5 (1934-5) 1933 Pukapukans p.61

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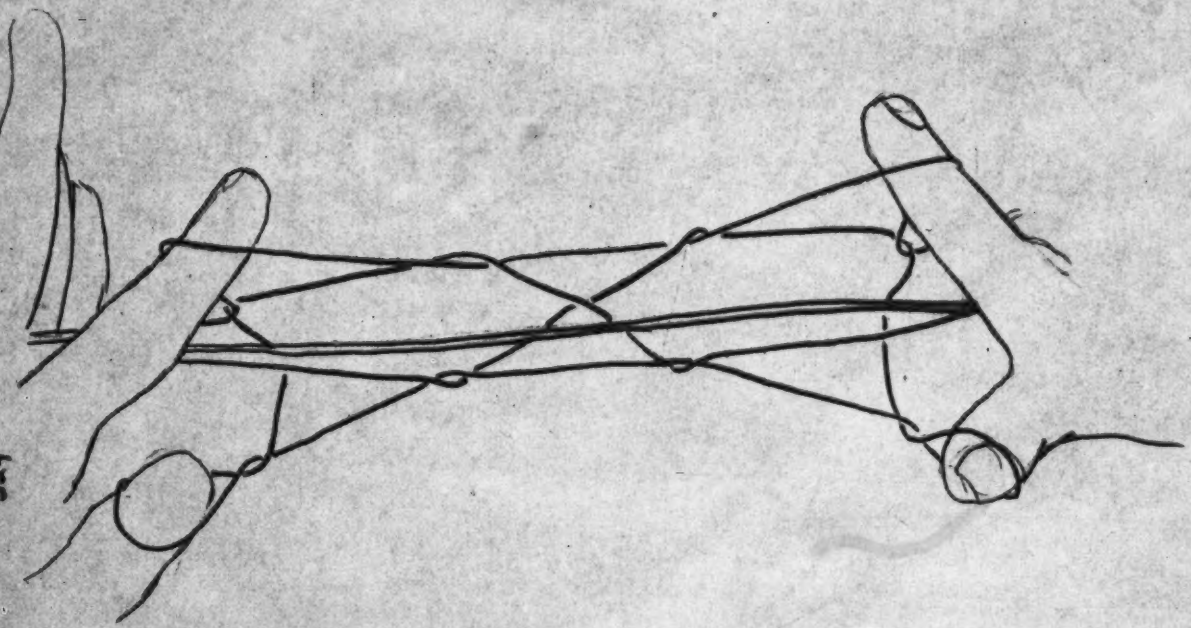
Figure 32. Te-liu-wuwuli-ki-lunga



4: Beaglehole-42 E-5 (1934-5) 1953 Pukapukans

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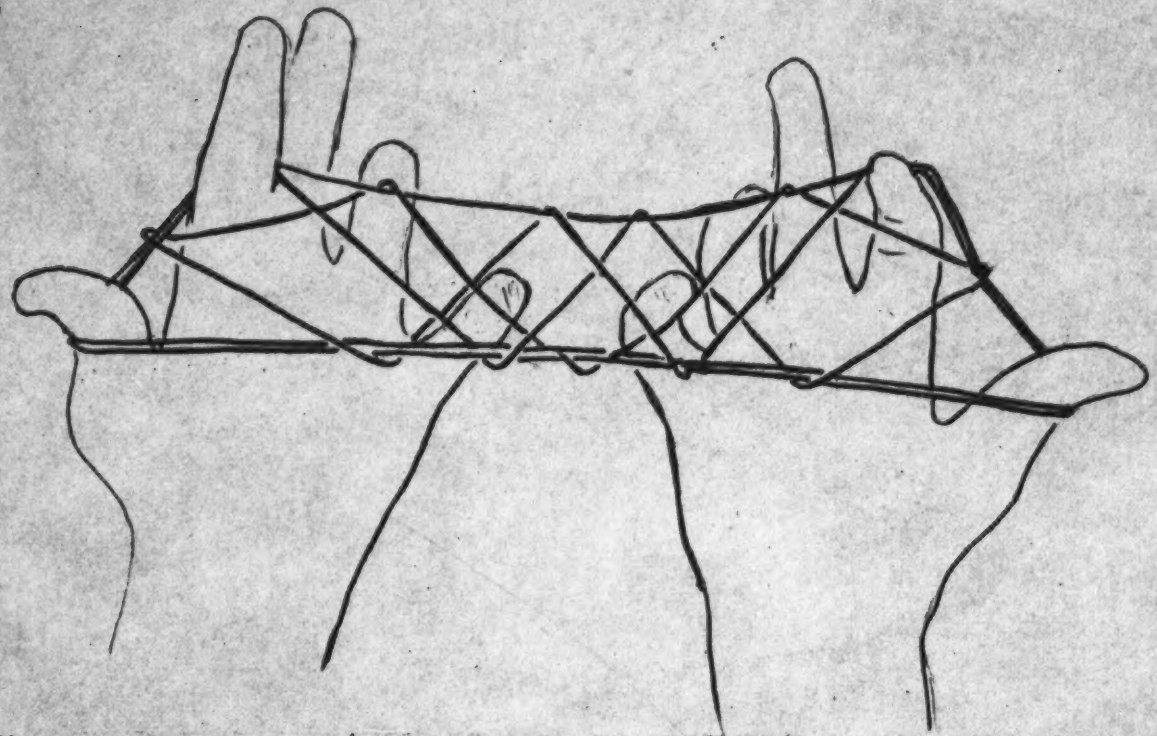


Figure 33. Paiokiole (Movement 11, Kiti-kiti-polo-iti). Figure also shows insertion of little fingers, movement 12.

4: Beaglehole E-5 (1934-5) 1933 Pukapukans p.63

Figure 34. Paiokiole (Movement 14, Taoa-kula)

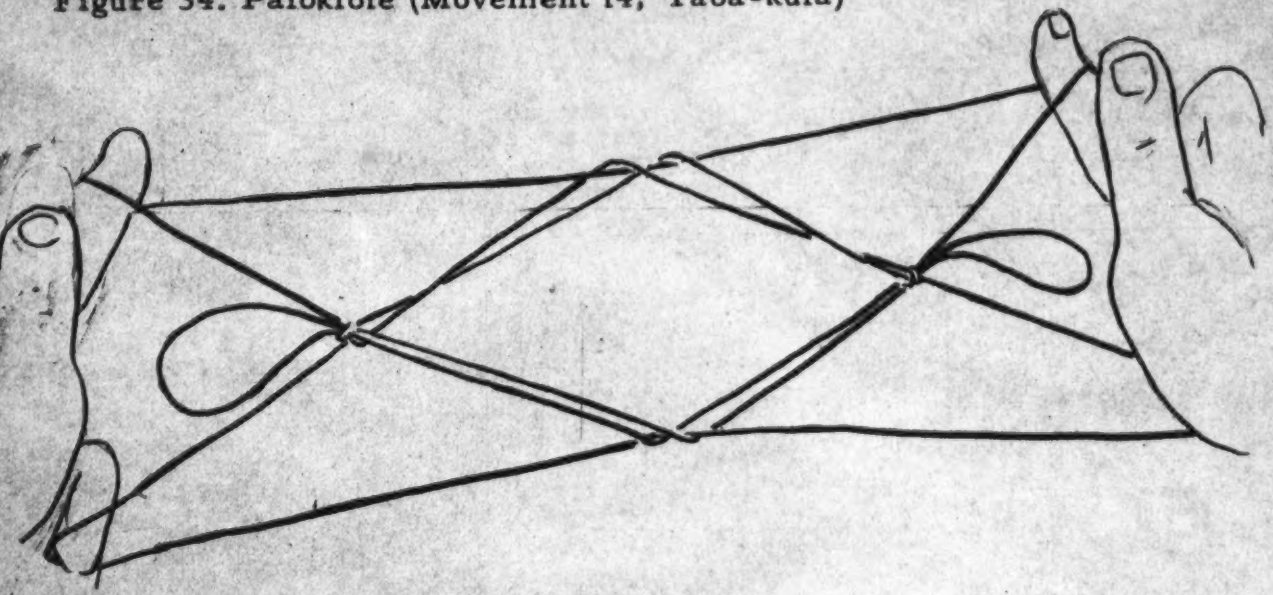
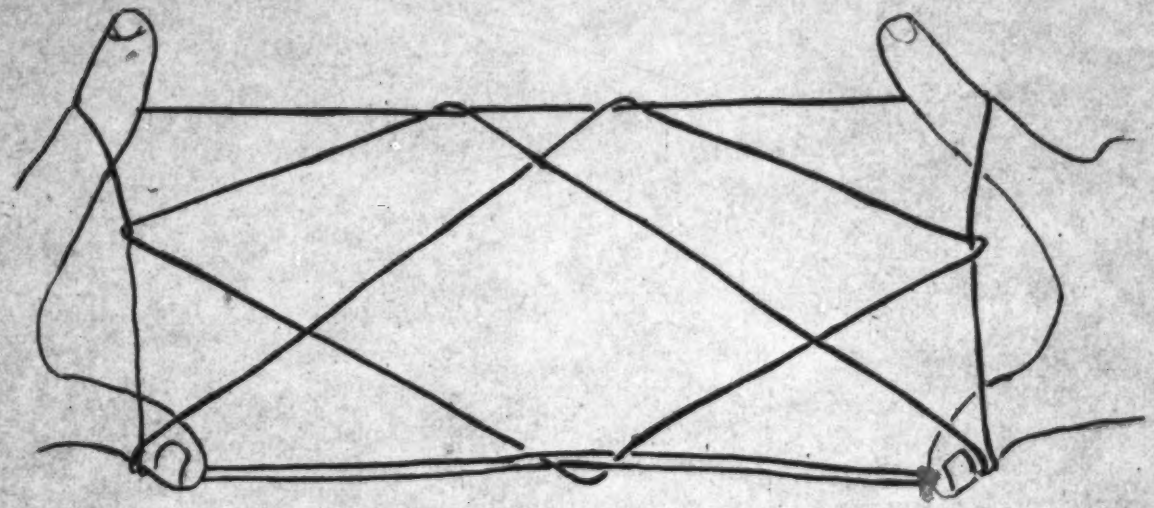


Figure 35. Paiokiole (Movement 15, Langai-tawola)



4: Beaglehole E-S (1934-5) 1953 Pukapukans p.65

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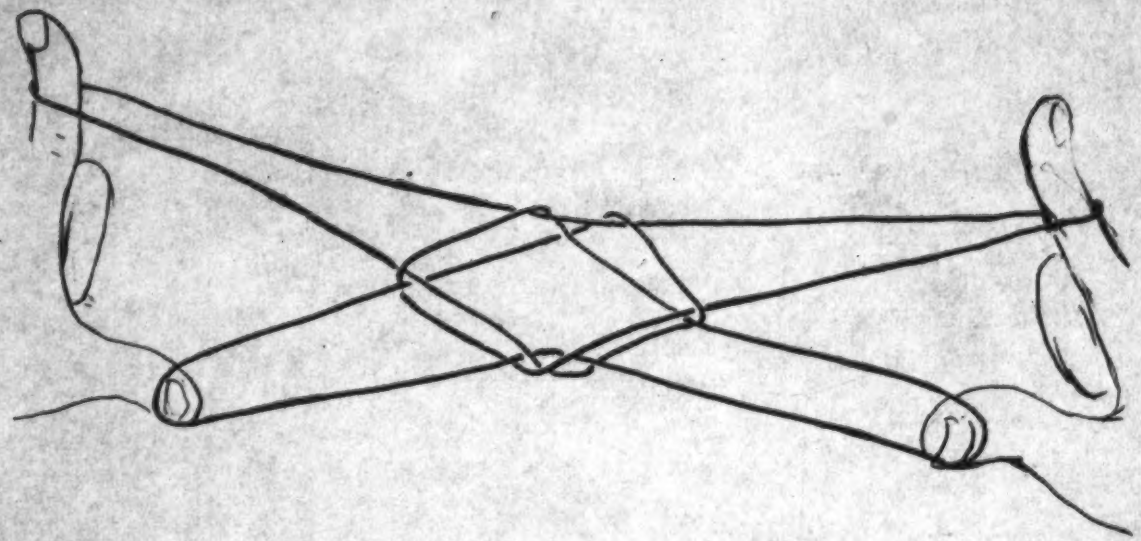
Figure 36. Paickiole (Completed figure)



4: Beagiehole-66 B-S (1934-5) 1953 Pukapukans

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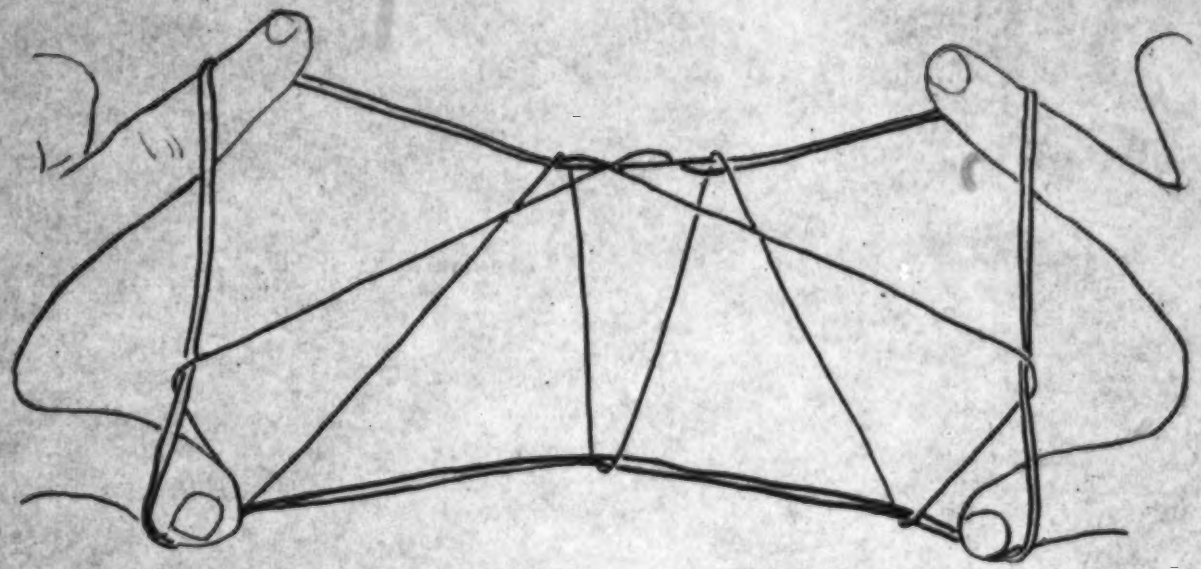
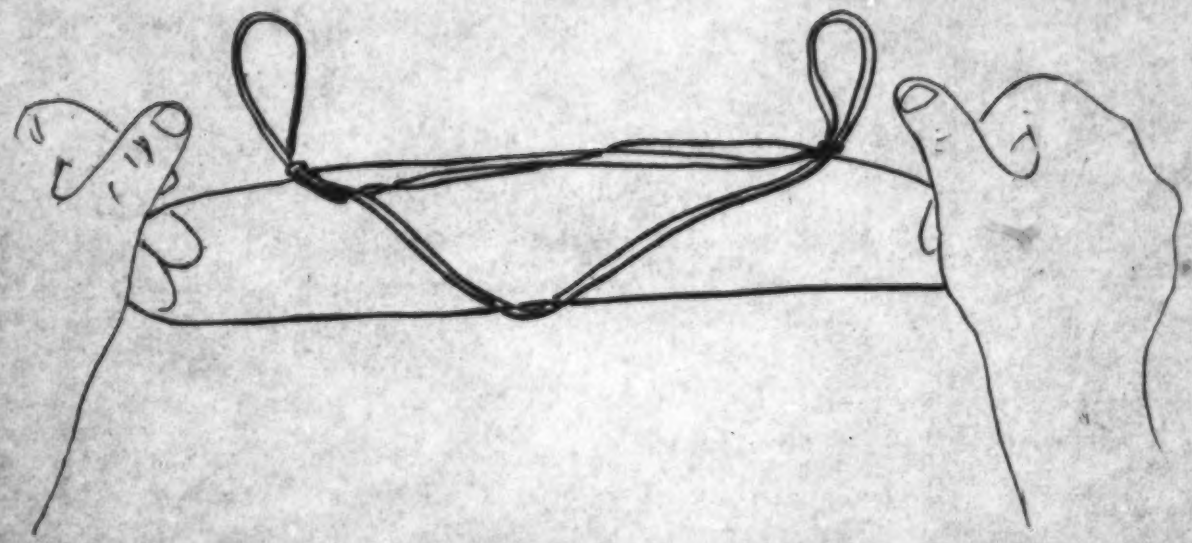
Figure 37. Tikonikoni (Movement 10)



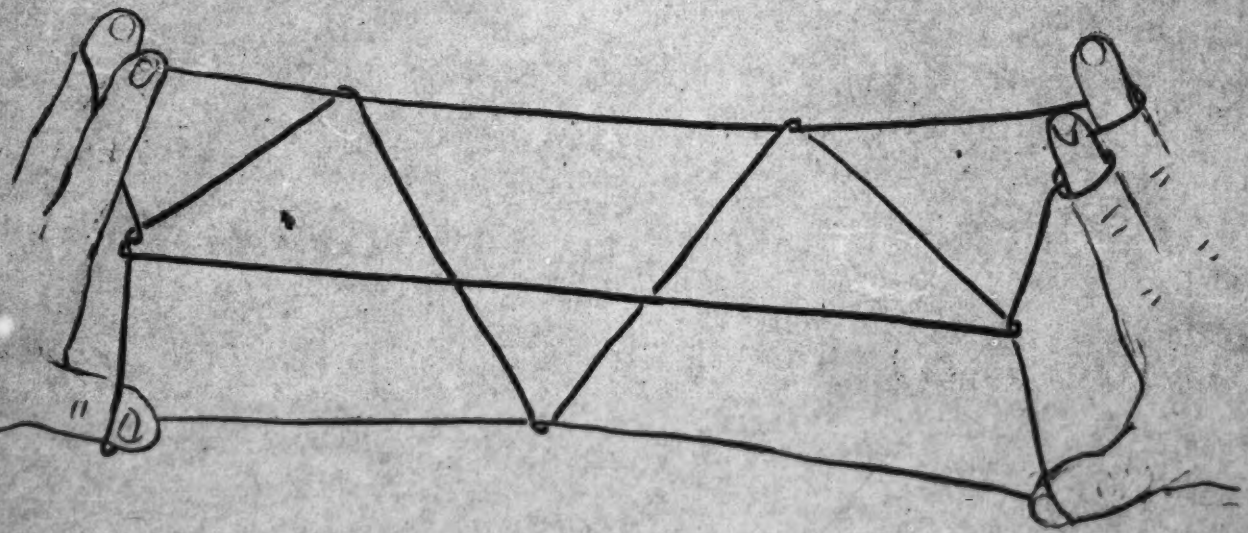
4: Bangiakoio-67 E-5 (1956-5) 1953 Pelagrinos
524

Figure 38. Tikonikoni (Completed figure)



6: Bengiokoin E-5 (1934-5) 1955 Pukapukans p.48

Figure 39. Te-tau-lunga



4: Beschicke-er E-S (1934-5) 1953 Pukapukans

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Figure 40. Te-tau-lalo

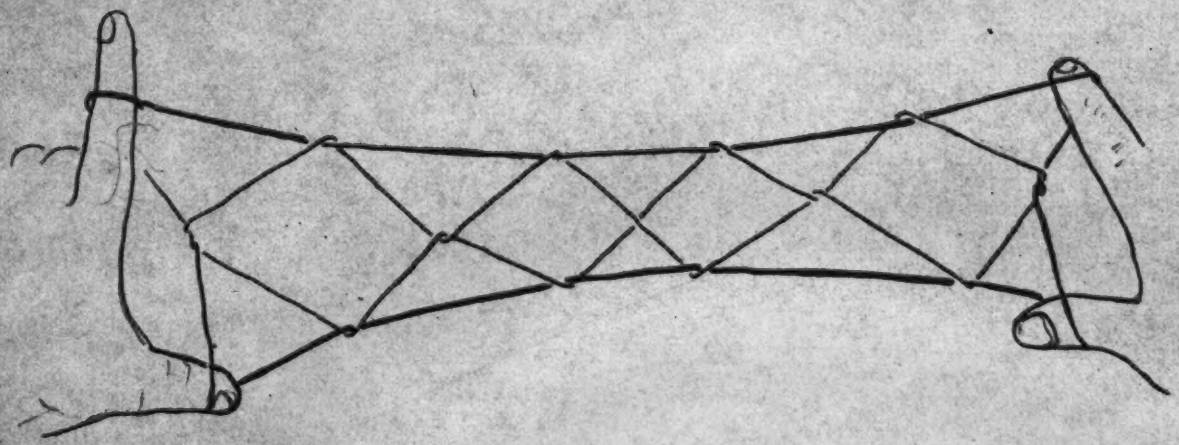
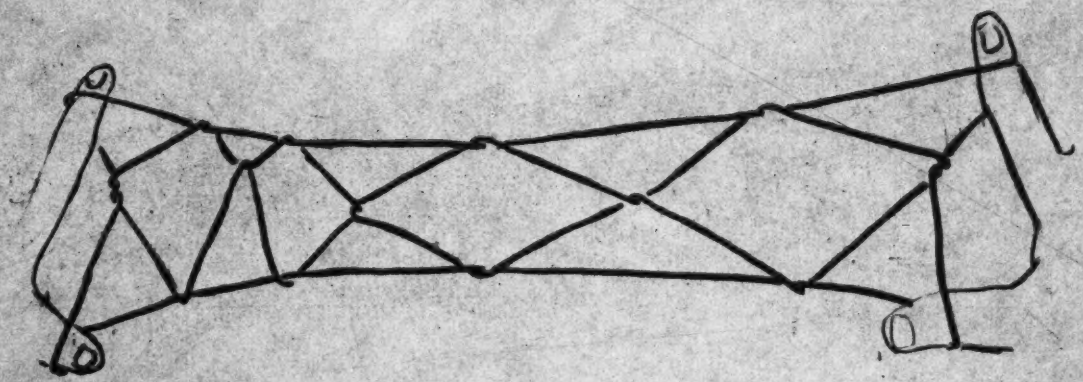


Figure 41. Te-kivi-a-te-kakai

Figure 42. Te-kivi-a-Yilewu



4: Bangiahole-Ni E-5 (1934-5) 1953 Pukapukans

Figure 43. Te-imu-o-Te-Lautalo

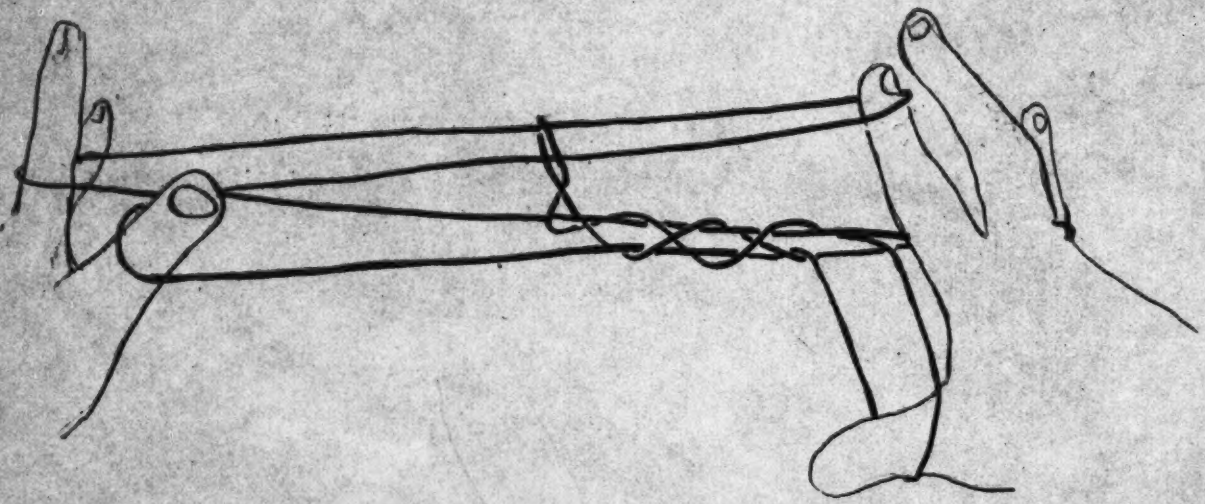
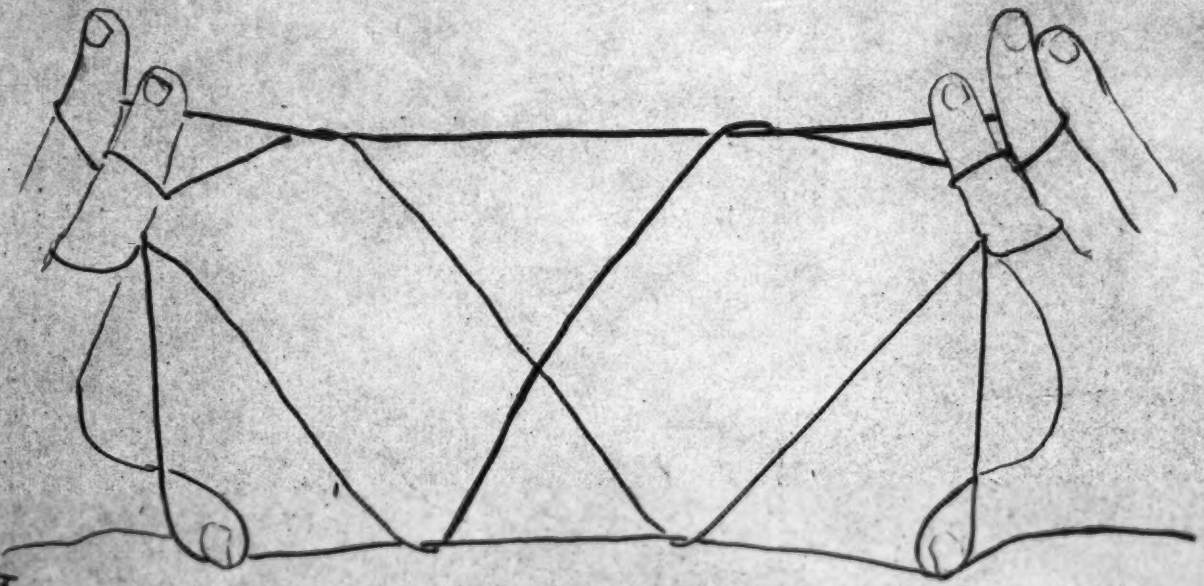


Figure 44. Te-tavatava-o-te-wui-kiole

4: Bangkokolo-M E-3 (1934-5) 1953 Pukapukans

Figure 45. Te-la-palepale



4: Bangkok E-5 (1954-5) 1953 Pukapukans p.75

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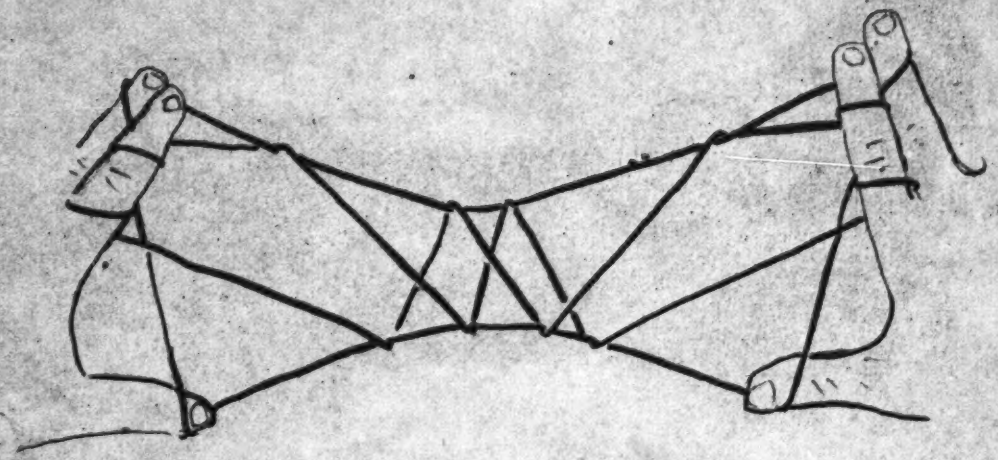

Figure 46. Moamoa

4: Bangiehole-N E-5 (1934-5) 1953 Pukapukans
Gray

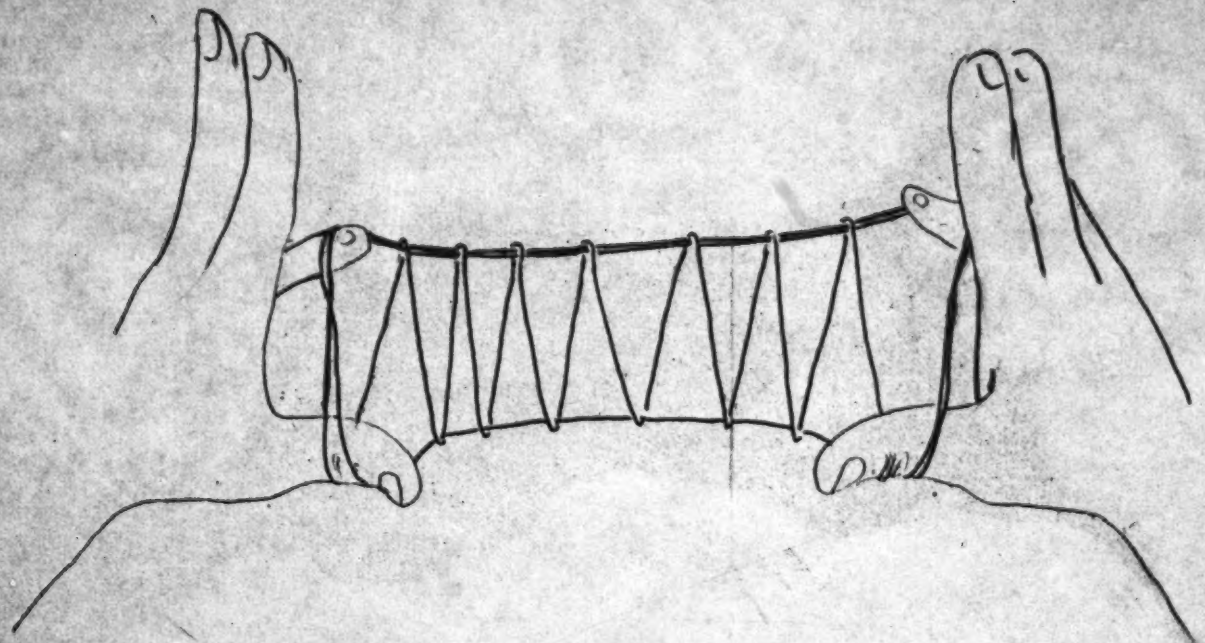

Figure 47. Te-wua-ya-valu

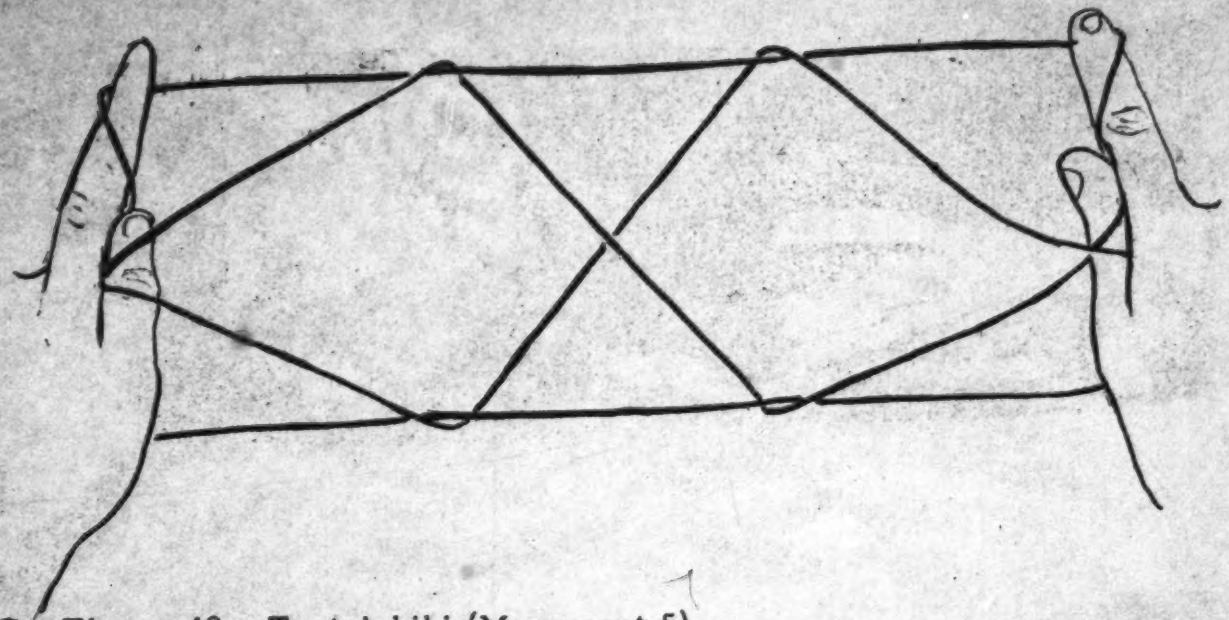

Figure 48. Te-tai-kiki (Movement 5)

4: Beaglehole-M E-S (1934-5) 1951. Pukaputana

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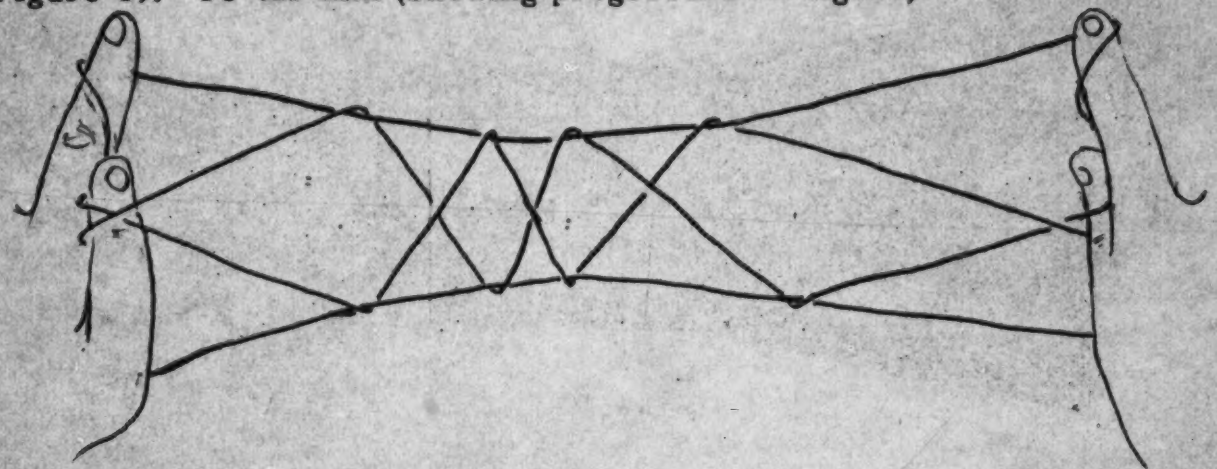
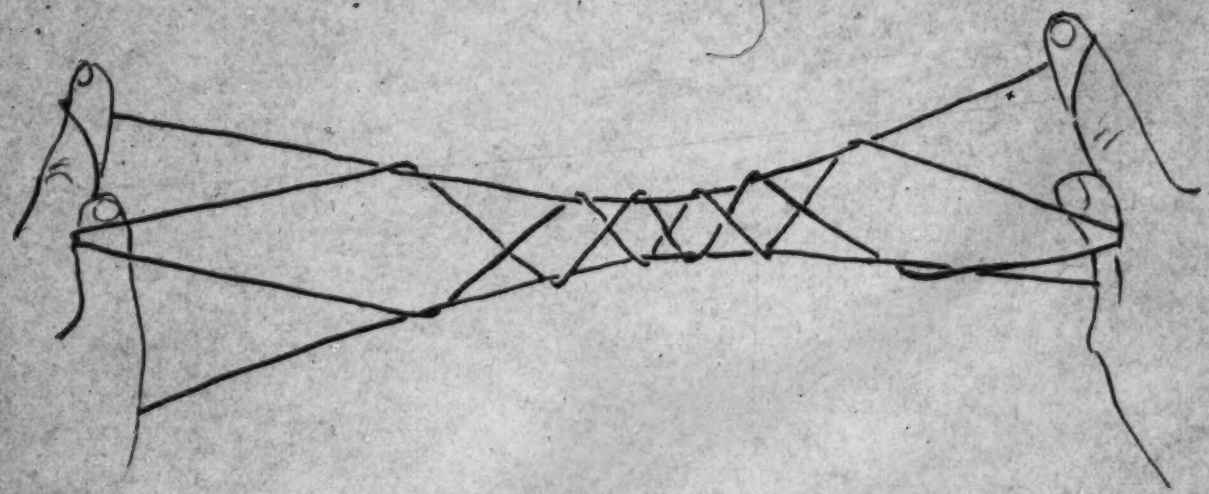
Figure 49. Te-tai-kiki (Showing progression of figure)



4. Bergshole E-5 (1934-5) 1953 Pukapukans pM

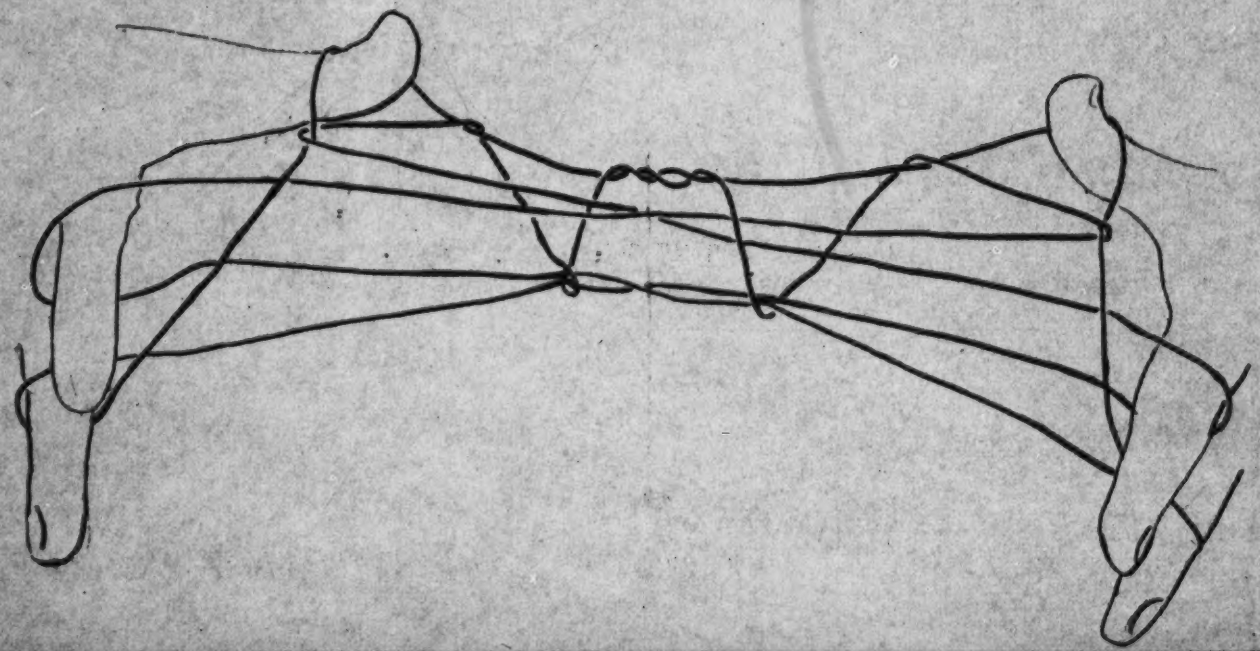
● SN

Figure 50. Te-tai-kiki (Showing the tide going farther out)



4: Bengtsholm-00 E-5 (1954-5) 1955 Pukapukans
0524

Figure 51. Matua kalou (Movement 3)



4: Rarophole E-S (1954-5) 1953 Pakapukana

Figure 52. Matua kalou (Movement 5, ui kauana)

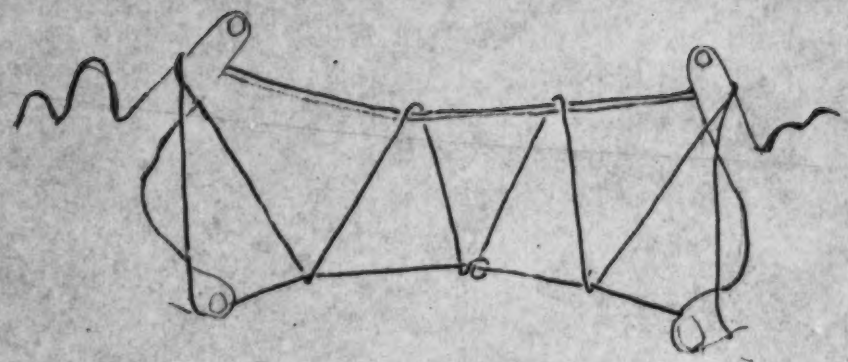
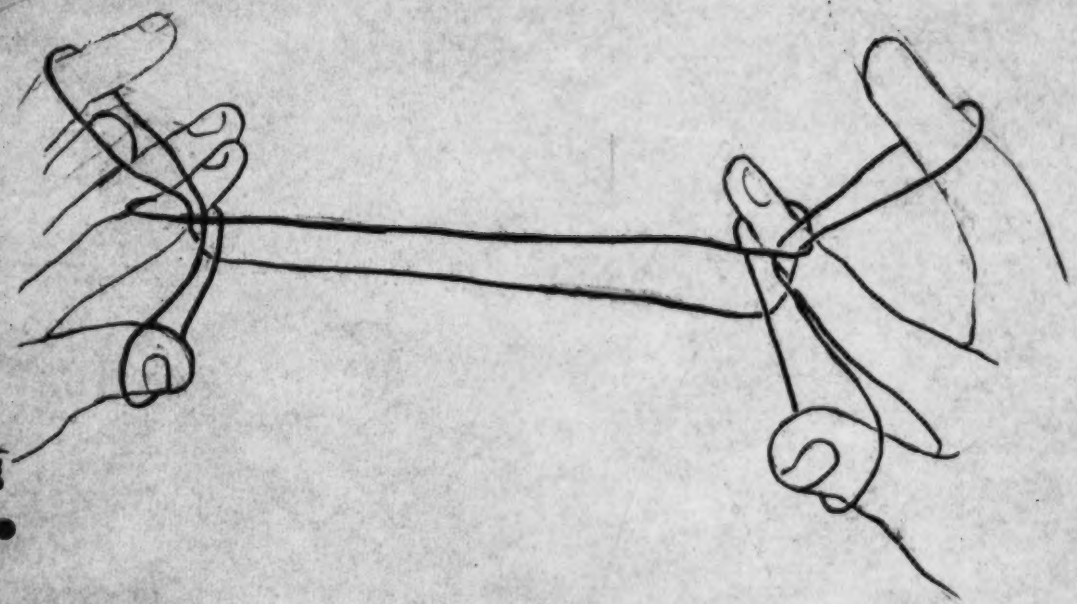


Figure 53. Matua kalou (Movement 7, ui lalapa)

4: Beagleholo E-5 (1934-5) 1933 Pukapukans p.83

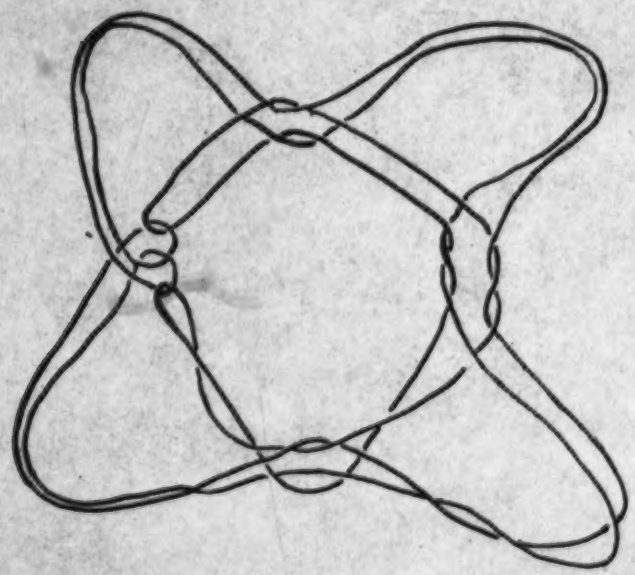
Figure 54. Te-kolemu-yengiyengi



4: Bengtsson-Pf E-5 (1934-5) 1953 Pukapuka

Figure 55. Tava (Movement 7)

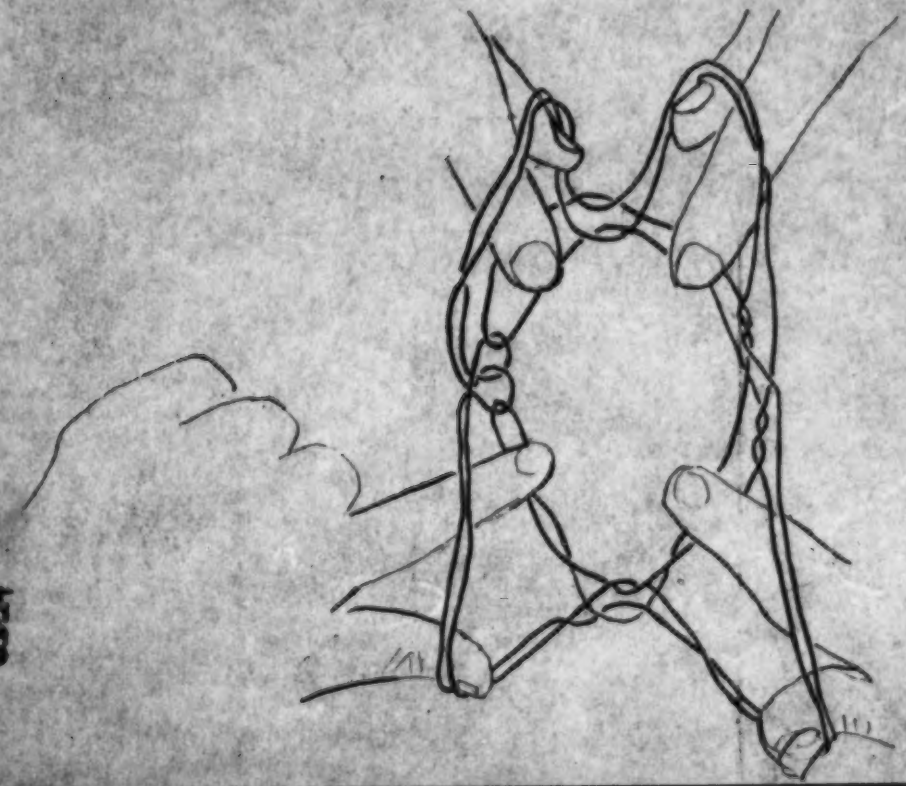
Figure 56. Tava (Completed figure worked by two players)



4: Beaglehole-66 E-5 (1934-5) 1953 Pukapukans

● 524

Figure 57. Tava (Showing hands of two players inserted for the "over and over")



4: Bengkulu E-5 (1934-5) 1953 Pekapitan p.57
0.524

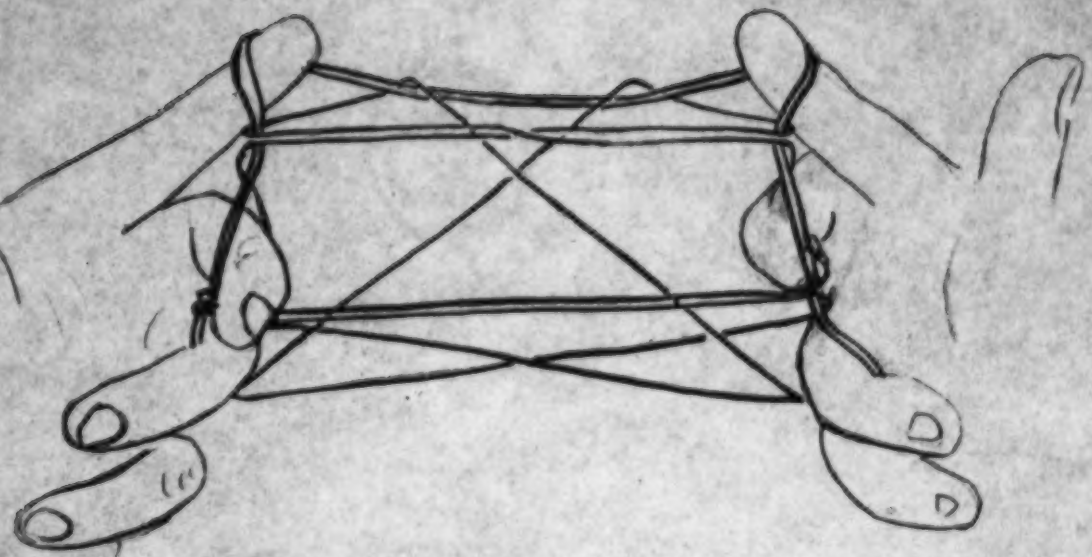
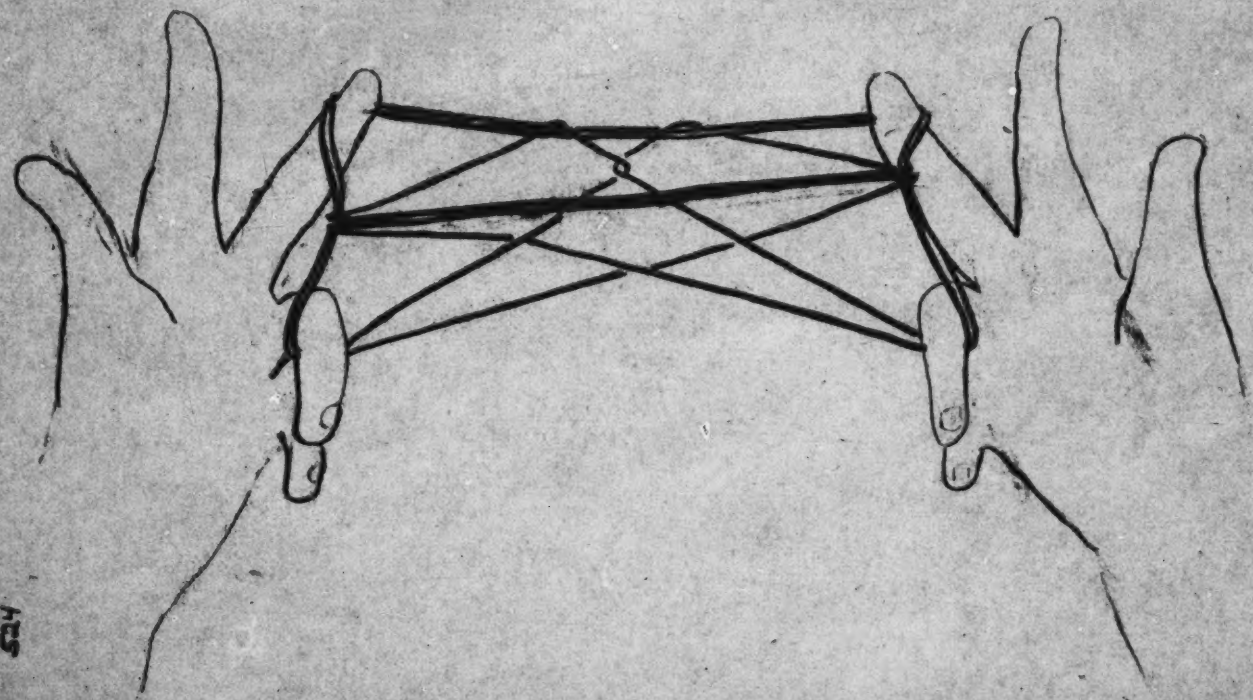


Figure 58. Taku-pu-lele-lua (Movement 14)

4: Bangkokia E-5 (1974-5) 1955 Philippines

Figure 59. Taku-pu-lele-lua (Completed figure)



4: Beaglehole E-5 (1934-5) 1959 Pukapukans p.39

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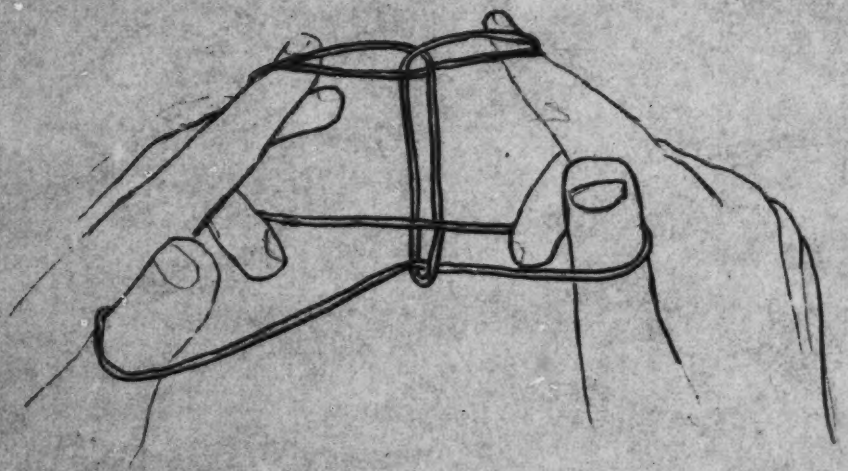
Figure 60. Te-Pu-a-Loto (a three-dimensional figure)



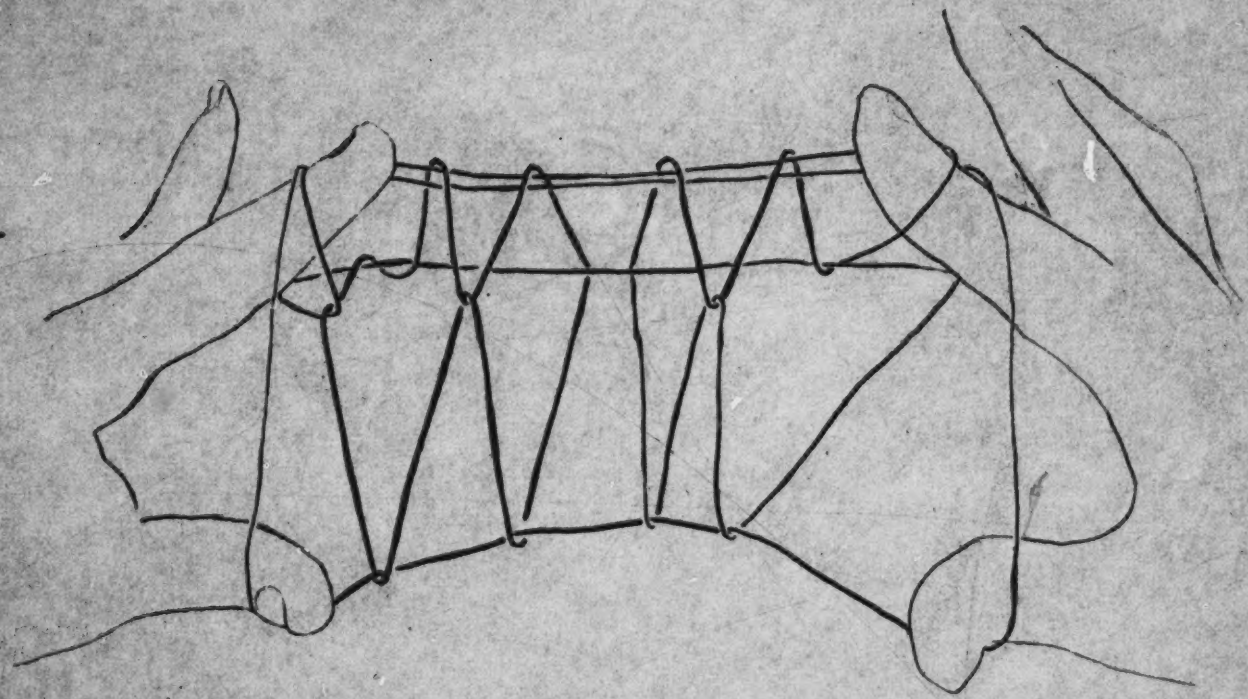


Figure 61. Te-itu-wala-kula (a three-dimensional figure)

G. Baxgrakoto E-5 (1934-5) 1933 Pokapokana p.38
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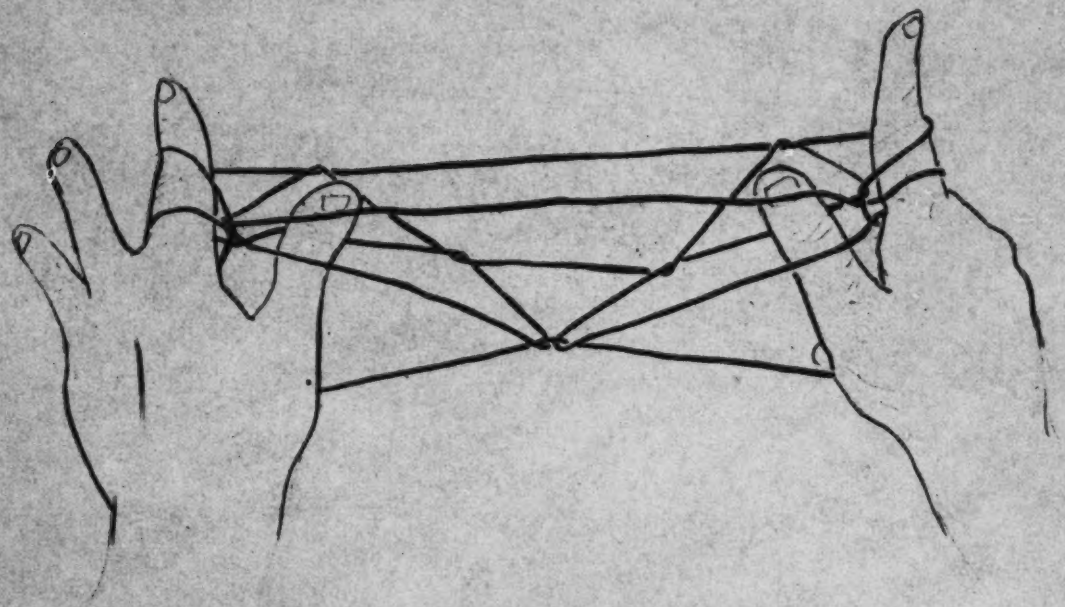
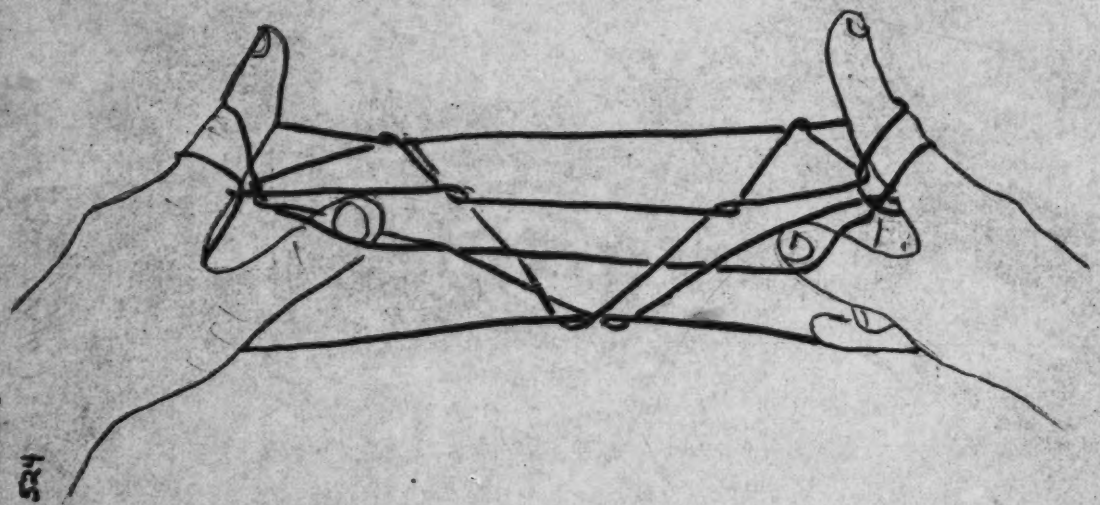
Figure 62. Te-tala-o-te-yamayama (Movement 7, showing thumb pickup)



4: Bergsholz-94 E-5 (1934-5) 1955 Pelaspiron

Figure 63. Te-tala-o-te-yamayama (the completed three-dimensional figure)



4: Beaglehole-Tj E-5 (1934-5) 1953 Pukapukans
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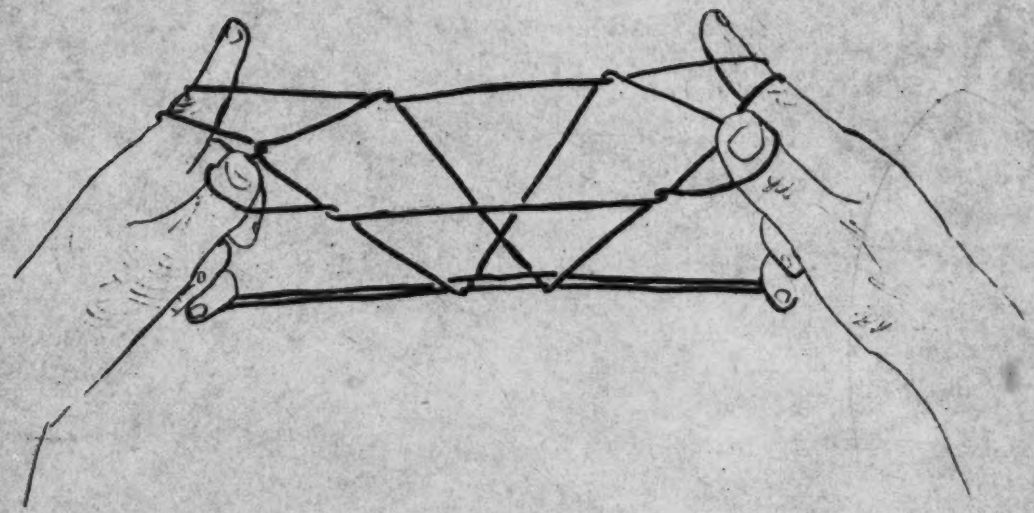

Figure 64. Kumete (a three-dimensional figure)

4: Beagiehole E-5 (1934-5) 1953 Pukapukans p. 94
524

4: Bengtsholder-98 E.S (1934-5) 1953 Rukapukans
● 524

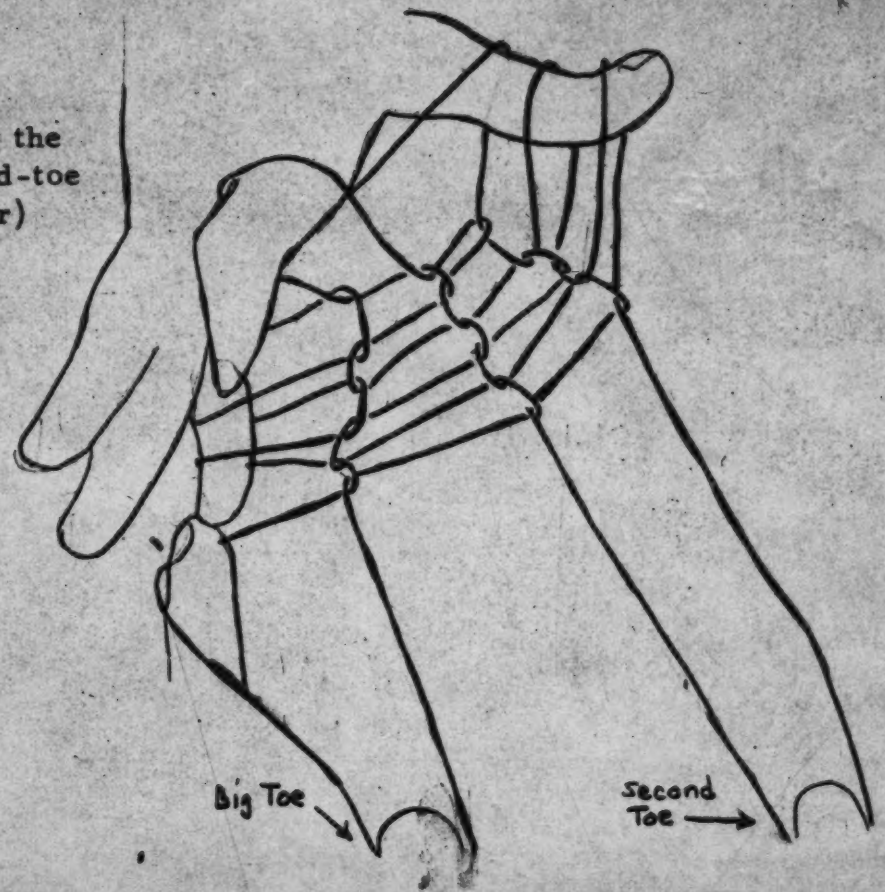

Figure 65. Kupenga (Movement 9, showing the looping of ulnar second-toe string over little finger)

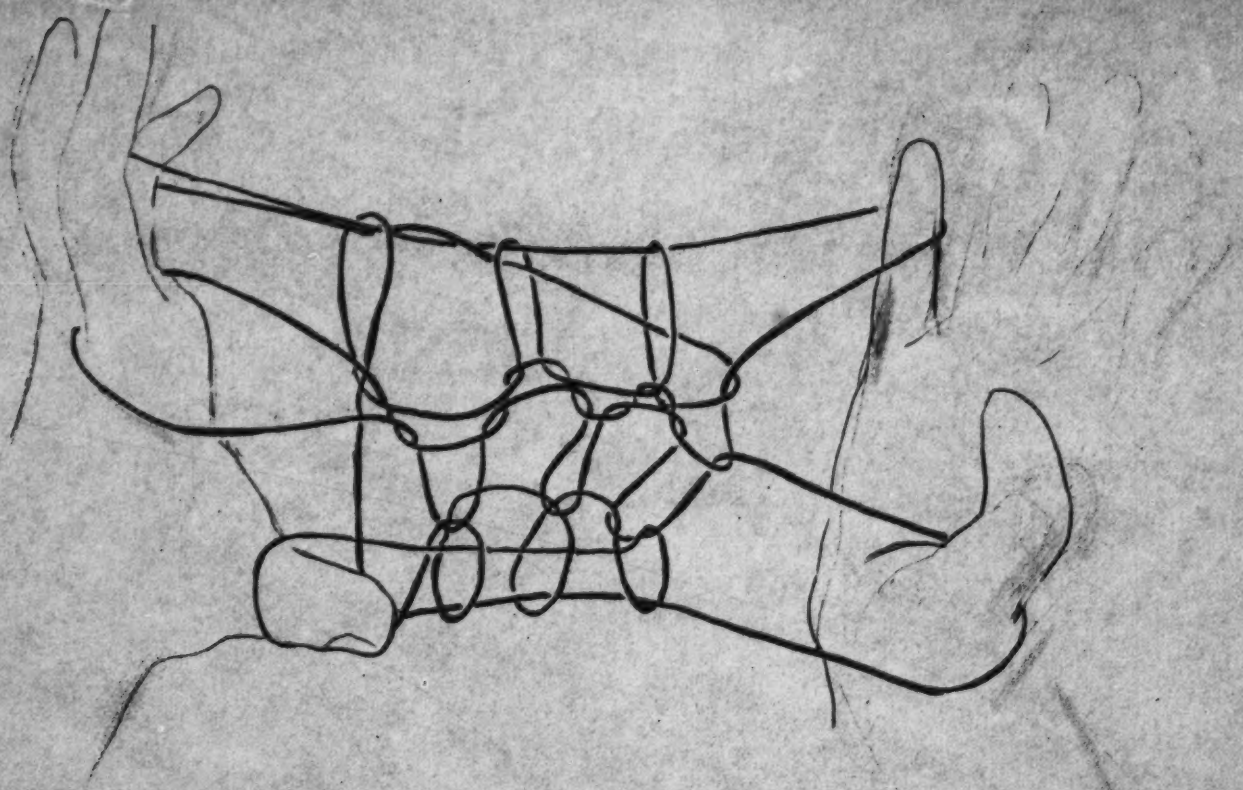

Figure 66. Kupenga (Completed figure)

8:Beaglehole and Beaglehole--10 E-5 (1934-35) 1953 Pukapukans

122 Humor.

Loita, the matakivikivi, crosspatch of Motu Ko, had just returned from Wale this during the stay of the Ngake villagers in their rich islet. In characteristic fashion, enhancing the merits of her village motu, at the cost of the other two villages, reported that Wale, as usual, was awful; nothing to eat there. "Ko pupu wua i latou lemu." "Their anuses merely flatulate." She accompanied the remark with the proper noise from her mouth. The point being, of course, that the other people had no food to eat and consequently could pass no feces. She laughed heartily at her joke.

597 Adoption.
592
159

Mata and Leleau's adopted child, Lima, came back from school, took off his shorts and started down the road in the direction of Loto village. Mata screamed after him, and, seeing that he wasn't coming back, she ran after him, and after a while came back. Lima, who had been whipped, came running along in front of her crying hard. He went right into the house and she shut two doors on him.

I asked her what Lima had done, and she answered that after having been gone all morning, and coming home late from school to boot, here he was going to leave them (maka: throw them away), her and Leleau, and go off to his parents in Loto. He never stayed home with his adopted parents; this was her grievance. In point of fact, when the child came back from school, Mata paid no attention to him, Leleau was away.

A similar sentiment was expressed shortly afterward by another woman, Matala, the adopted mother of Vaimau. While we were talking, the little boy appeared. She asked him where he'd been. He said to the mate (house of death) in the next village. She then asked him why he had maka's thrown over, left Akalili, his adopted father, like that. (Akalili was nowhere in sight.) It seems from these examples that foster parents exert every effort to keep their adopted children from visiting their real parents too much, to keep these children for themselves.

224 Introduced toys and games.
177

Marbles, poi, are made from wetau wood, and are about 20 mms. in diameter. A square or oblong is marked out on the ground, Kohati te ala, and the stake marbles, tuku, are placed in the ala. Tuku te poi ki lunga ho te ala. From the distance of a fathom or more, the contestants throw their tore [?] marbles, tamou, towards the ala. Throw or shoot the marble in pata. The man whose tamou is nearer the ala shoots

524 first at the tuku in the ala. If he hits both tuku, he may try
177 for his opponents' tamou and if he hits this also, then he wins this. If he misses the first time, then his opponent shoots with his tamou.

The toy bow and arrow is used as children's sport today. The bow is made with tua niu bound together with continuous thread of lauwala. The bow string is uka. The arrows, ti, are tua niu. The bow is wena. A heap of puapua seeds is put in the center of the ring. Children sit in a circle and fire arrows at the seeds. Each seed impaled by the arrow counts one point to the child who shot the arrow. No game was played during our visit, but was described thus by informants.

181 Miscellaneous.
888 For the man, it is important to marry and have children, that the paternal descent line may be continued. For himself and the next generation, a man likes to have a house, one or more canoes. He may sow sexual wild oats in abundance in his youth, and this applies also to the women. But in old age, the ideal is to live to a ripe old age, and then to retire from active work, to be surrounded by a crowd of children and grandchildren, and to spend one's days in active talk with one's contemporaries, directing the activities of the lopa group.

539 [See 3: Beaglehole and Beaglehole, p. 65--analyst.] As the men advance with the canoe cortege outside the reef, mako and wave the paddles, the following mako is the one that is sung:

E lapaki te woe alua ma no
Katali ka kina yai yo yio
Ke te ta ko yio yio
Ke tangi te titi oyio yio
Ke tangi te lawa oyio yio
Koa lelei ka koa lelei ka
Taku papano ia.....

621 [See 1: Beaglehole and Beaglehole, p. 221--analyst] In the case
591 of matrilocal residence of the male, or even in the case of customary patrilocal residence, the man may wish to tau [affiliate] in the village of his wife. In the former case, residence takes care of itself, but in the latter case, he will continue to live patrilocally, but join his adopted village for play, copra making, food divisions, etc.

[illegible]44 Today there is a tendency for the people to pull and eat the tuio before the plant is fully mature and ready to eat, often

9:Beaglehole & Beaglehole E-5 (1934-1935) 1939
CZ.11 Pukapuka CZ.11

159 watching the delivery. For some reason it was an extremely
593 difficult birth and I became terribly frightened by what I
[845] saw. The child was born dead, but my mother soon became well again.

I loved my father much more than I loved my mother. My mother was never unkind to me, but it was my father who did most for me and gave me all the little things that I wanted. This is the reason I loved him more. My father not only sewed up clothes for me, but he washed them as well so that I would always have a clean dress for school or church. I do not think that I ever wished to marry him.

159 I remember that as a child I was especially frightened
775 of old people. When I passed them on the road or in the
888 bush it always seemed as if they were threatening me with knives, as if they wished to cut me up. I was afraid of ghosts too, like everyone else. Adults always frightened children, and children each other, with the cry, "Look out for the ghost!"

159 As a girl I loved to play at having babies. We used
857 immature coconuts as babies just as the little girls do today.
524 Sometimes only girls played this game, at other times both girls and boys, aged 10 years or so. We played at marriage and intercourse. After a pretended cohabitation, the girl-mother stuffed the coconut inside her dress and realistically gave birth to her child, imitating labor-pains and letting the nut fall at the proper moment. My mother did not like me to
[861] play this game, and she whipped me whenever she caught me at it. But I played it frequently all the same, because all the girls thought it was the best game. Other games we played were those that are common today, such as hide and seek, guessing games, water sports, and the game of a mock court where people are arrested by policemen for committing adultery (the game of *wai tale* that the children of Yato told you that they played all the time during their recent stay at their reserve islet of Motu Kotawa). I had many girl friends as a child, and we used to play together during most of every day.

159 When I was about 12 years old my father died in Samoa. Several years after this my mother married a man younger than herself. I was glad to have a new father for a change.